



Building Management System User's Manual



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Chapter 1 – Introduction

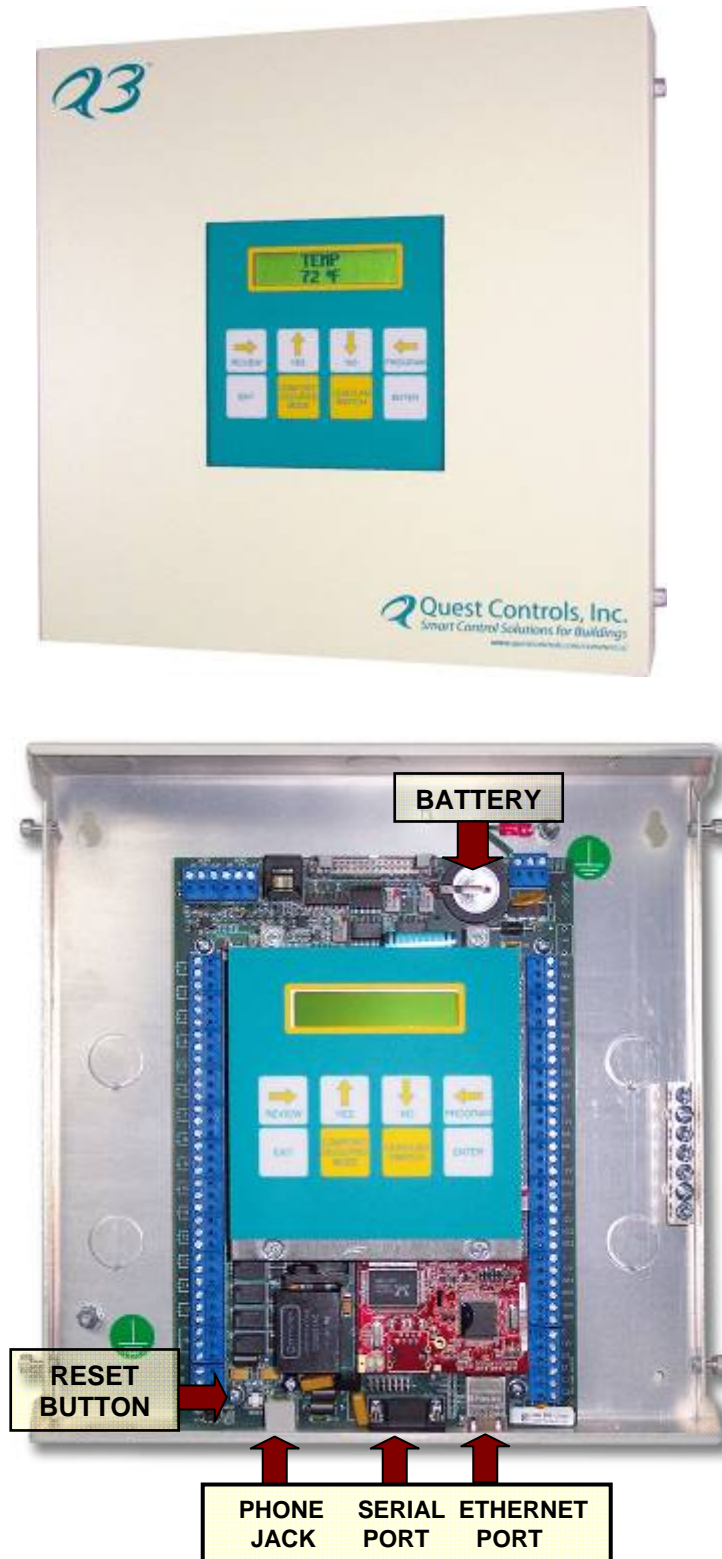
Congratulations on your purchase of the Q3™ Building Management System! The Q3 is a state-of-the-art electronic monitor and control system that provides you with an integrated solution for the facility management of your small and medium size buildings and remote sites. Acting as your smart eyes and ears at the remote site, the Q3 is capable of performing your HVAC, Lighting and Refrigeration Control and Monitoring, Environmental Monitoring, Power Monitoring, Generator Monitoring, Equipment Monitoring, Intrusion Alarming and Door Access Control --- all in ONE product.

This User's Manual is intended to provide the information needed to get started with Q3, to highlight the Q3's features, specifications, and applications, and to discuss the communications options available for communicating with the unit. For information on how to install or how to program the unit, please refer to the *Q3 User Manual: Installing the Unit* or the *Q3 User Manual: Programming the Unit*. Please contact us at Quest if you have product questions or suggestions to improve this User's Manual.

Chapter 2 – Product Description

The Q3 is an intelligent Building Management System that monitors and controls a building's critical operating equipment, environmental conditions, and door access functions. The system can be programmed to monitor and automate many building functions such as lighting, refrigeration, HVAC, power, environmental controls, and interior and exterior building access. The Q3 allows for on-site monitoring or remote interrogation from any maintenance or alarm center via serial port (craft port), modem, or Ethernet connections.

2.1 Exterior and Interior Views of Q3



2.2 Features and Benefits

The Q3 BMS controller offers features and benefits that make it the ideal choice for managing small to medium size buildings.

Compact Centralized Control: The Q3 centralizes the management of a facility by combining controlling, monitoring and communication functions in a single cost effective controller. By replacing multiple devices, the Q3 reduces capital expenditure and installation costs. Its compact wall mount configuration enables it to fit in tight wall spaces.

Expandable Input and Output Modules: The Q3 can monitor and control many functions. It is configured with 16 universal inputs that accept digital or analog signals, 16 digital outputs, and 2 optional analog outputs for flexible control options. The system is expandable to 64 universal inputs, 64 digital outputs and 10 analog outputs all of which are configured in modular units to allow for incremental growth.

Optional RTU Control Module for HVAC Control: Up to 16 Q3 RTUs (Roof Top Units Controllers) can be easily networked into the Q3 system to control multiple air conditioning units for fan, cooling, heating, economizer, and both zone and supply air temperatures. Together, the Q3 and the Q3 RTU controller can monitor and control a building's complete HVAC system to increase energy efficiency and reduce both installation and energy costs.

Flash Memory and Versatile Programming: The Q3 has non-volatile FLASH memory that prevents program loss in the event of a power failure. It also stores program uploads that allow for easy system upgrades. This allows the entire operating system to be upgraded remotely. With its versatile programming options, the Q3 is simple to customize for specific applications or customer requirements and program changes can easily be made through any of its user interfaces.

Multiple User Interface Options: A wide range of user interfaces make communicating with the Q3 convenient. The field-friendly front panel LCD and keypad and the built-in RS-232 communications port provides access for on-site monitoring and programming changes. Remote control, interrogation and programming changes can be made via an industry standard dial-up modem or Ethernet interface.

Convenient, User-Friendly Web Interface: The web browser interface makes it convenient to manage the unit remotely and monitor system status from any alarm or maintenance center with an Internet connection. Review inputs and outputs, change setpoints, bypass outputs, change date and time schedules, set-up alarm notification and program site information. Remote access to all of these functions reduces the necessity for on-site maintenance.

Automated Alarm Notification: The Q3 will automatically generate alarms when an equipment alarm contact has changed state, or a function being monitored does not match

the programmed value for an alarm setpoint. With the modem option, the unit has the ability to dial up to four phone numbers when an alarm or an alarm clear message needs to be reported. With the Ethernet option, the unit can email up to four groups of email addresses with an alarm and send SNMP traps to 4 IP addresses. The automated alarm function acts as an early warning system for equipment failures and environmental problems, providing notification before the problem results in costly downtime.

Door Access Control: The Q3's door access control feature provides added security and intrusion monitoring. The unit supports up to four doors of access control and can provide digital feedback from the door to alert during illegal entry or door ajar conditions. The Q3 can handle a maximum database of 600 cards for large personnel requirements and can be customized for specific applications. The Q3 also stores the 800 most recent door access entries.

2.2 Specifications

Part Number: 150435

Inputs: 16 universal inputs expandable to 64 in 16 input increments, (order part# 150155 for Universal Input Expansion Board-UIB) Analog (0-5VDC or 0-20mA) or dry contact closures

Outputs – Digital: 16 digital outputs expandable to 64 in 8 output increments, (order part# 150154 for Digital Output Expansion Board-DOB)

Contact Rating: 30VDC, 1.0 amps, 120 VAC, 0.5 amps

Outputs – Analog: 2 on-board optional, expandable to 10 analog outputs (order part# 150156 for Analog Output Expansion Board-AOB), 0-10VDC or 0-20/4-20mA

Network: RS-485 communications bus for communicating with up to 16 RTU controllers and Input/Output expansion modules (order part# 150440 for RTU)

Card Access: Supports industry standard Wiegand format, proximity or card swipe readers. Up to 600 cards can be programmed per site. Logs 800 most recent events.

Power: 24V AC or DC@0.25 amps

Front Panel: Built-in programming panel with 8 keys and a 32-character backlit LCD Display

Modem: Supports industry standard Modems (V.90, V.34) with error correction & data compression

Serial Port: DB-9 RS-232 port. Supports asynchronous communications. Programmable for speed, parity, & bit format

Network Interface (option):

LAN: Ethernet 10baseT (order part# 300165Q) with RJ-45 connector

Protocols Supported: TCP/IP, Telnet, DHCP, HTTP, SMTP, SNMP v1, v2c Traps

Logging: Logs all inputs, outputs, and alarms, up to 16,000 points

Software: Supports any off-the-shelf terminal communication software (e.g. HyperTerminal)

I/O Terminals: 2 piece pull-off terminals for all field wiring

Battery: Long life lithium: 10-year shelf life, 1.5 years under load

Temp/Humidity Sensor Accuracy: Temp: $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$), Humidity: $\pm 2\%$ of range. Temperature & Humidity sensors included

Ambient Operating Temp: -20 to 180°F (-29 to 82°C), 0-95% RH Non-condensing

Certification: UL, CE

Dimensions: 11"W x 11"H x 2"D (279mmW x 279mmH x 51mmD)

Weight: 4.5 lbs (2.0 kg)

Warranty: One (1) year

Chapter 3 – Applications

The Q3 is extremely flexible which allows the user to monitor and control a wide variety of equipment, environmental functions, and security systems in many different buildings and facilities. The diagram and the lists of typical Inputs and Outputs that follow, show the most common applications.



3.1 Small Retail Retrofit

Job Name: Small Retail - Retrofit					
OUTPUTS			INPUTS		
#	Digital Outputs	Interface	#	Input Name	Input Type
1	Outside Lights		1	Light Level Sensor	
2	Store Lights		2	Outside Air Temp	
3	Spare Light control point		3	Zone Temp	
4	Supply air fan		4	Supply Air Temp	
5	AC unit 1 cool		5	Zone Adjuster	
6	AC unit 2 cool		6	Return Air Temp	
7	Electric Strip Heater		7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		
16			16	Override button	

3.2 Large Retail

Job Name: Large Retail					
OUTPUTS			INPUTS		
#	Digital Outputs	Interface	#	Input Name	Input Type
1	Stocking level lights 50% (On/Off)		1	Outside Air Temperature	Thermistor
2	Stock Level 24v (Power)		2	Light Level Sensor	FC.
3	Customer level lights 50% (On/Off)		3	Phase Loss Monitor	Digital
4	Customer level lights 50% (Power)		4	Burglar Alarm Armed	Digital
5	Track Lights		5	Burglar Alarm Active	Digital
6	Outside Canopy Lights		6		
7	Sign & Soft Lights		7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15	Interior Override	Momentary Sw.
16			16	Exterior Override	Momentary Sw.

	RTU 1 – Fitness Area	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	
DI1		
DI2		

	RTU 2 – Golf Area	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	
DI1		
DI2		

	RTU 3 – Team Sports	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	
DI1		
DI2		

	RTU 4 – Shoe Area	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	
DI1		
DI2		

3.3 Convenience Store

Job Name: Convenience Store			Rev Date		
OUTPUTS			INPUTS		
#	Digital Outputs	Interface	#	Input Name	Input Type
1	Sign Lights		1	Light Level Sensor	
2	Building & Pole Lights		2	Outside Air Temp	
3	Canopy (gas area)		3	Phase Loss Monitor	
4	Medium temp cooler control		4	Medium Temp Cooler Temp	
5	Low temp freezer control		5	Low Temp Freezer Temp	
6	Ice Vault Control		6	Ice Vault	
7	Phase Loss Flex pack Refrig System		7	Sandwich Case #1	
8			8	Sandwich Case #2	
9			9	Novelty (self contained)	
10			10	Override Sign/Parking/Building	
11			11	Override Canopy (gas area)	
12			12		
13			13		
14			14		
15			15		
16			16		

RTU Controller 1					
#	Output Name	TO:	#	Input Name	Type
1	Supply Air Fan	G Terminal	1	Zone or Return Air Temperature	Thermistor
2	Cool Stage 1	Y1 Terminal	2	Zone Adjustment Slide Switch	10k Slide Switch
3	Cool Stage 2	Y2 Terminal	3	Supply Air Temp Sensor	Thermistor
4	Heat Stage 1	W1 Terminal	4	Fan Run Monitor (optional)	Digital
5	Heat Stage 2	W2 Terminal	5	Filter Monitor (optional)	Digital
6	Economizer (if present)	TBD			

RTU Controller 2					
#	Output Name	TO:	#	Input Name	Type
1	Supply Air Fan	G Terminal	1	Zone or Return Air Temperature	Thermistor
2	Cool Stage 1	Y1 Terminal	2	Zone Adjustment Slide Switch	10k Slide Switch
3	Cool Stage 2	Y2 Terminal	3	Supply Air Temp Sensor	Thermistor
4	Heat Stage 1	W1 Terminal	4	Fan Run Monitor (optional)	Digital
5	Heat Stage 2	W2 Terminal	5	Filter Monitor (optional)	Digital
6	Economizer (if present)	TBD			

3.4 Casual Dining

Job Name: Casual Dining Restaurant			Location:		
OUTPUTS			INPUTS		
#	Digital Outputs	Interface	#	Input Name	Input Type
1	Employee Stock Lights	LCC	1	Light Level Sensor	Foot Candles
2	Customer Lights	LCC	2	Outside Air Temperature	Temp F
3	Outside Sign/Building Lights	Panel Contactor	3	Phase Loss Monitor	Digital
4			4	KWH Pulse Meter	Digital
5	Patio Lights	LCC	5	Walk-in Cooler Temp	Temp F
6	Walk-in Cooler Control		6	Walk-in Freezer Temp	Temp F
7	Walk-in Freezer Control		7	Walk-in Cooler Run Monitor	Digital
8	Heat Lamps side 1 control		8	Walk-in Freezer Run Monitor	Digital
9	Heat Lamps side 2 control		9		
10	Cook exhaust & MAU control		10		
11	Kettle exhaust control		11		
12			12		
13			13	Employee Lights Override	
14			14	Customer Lights Override	
15			15	Outdoor Lighting Override	
16			16	HVAC Occupied Override	

	Zone 1 Upstairs Dining	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3		Y2
DO4	Stage 1 Heating Control	W1
DO5		W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	

	Zone 2 Salad Area	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3		
DO4	Stage 1 Heating Control	W1
DO5		
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	

	Zone 3 Kitchen	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	

	Zone 4 Main Dining	TO:
DO1	Supply Air Fan Control	G
DO2	Stage 1 Cooling Control	Y1
DO3	Stage 2 Cooling Control	Y2
DO4	Stage 1 Heating Control	W1
DO5	Stage 2 Heating Control	W2
DO6		
AI1	Zone Temperature Sensor	
AI2	Zone Temp Adjustment	
AI3	Supply Air Temperature	

Chapter 4 – Local Communication

The Q3 allows the user to manage the unit on-site. Local communication with the unit to interrogate the system or make program changes can be done through the front panel interface or through the serial (craft port) connection.

4.1 Front Panel Interface

The Q3's front panel interface consists of a 2-line by 16-character LCD display and a keypad that allows the user to review system status, change setpoints, and make program changes (Figure 1).

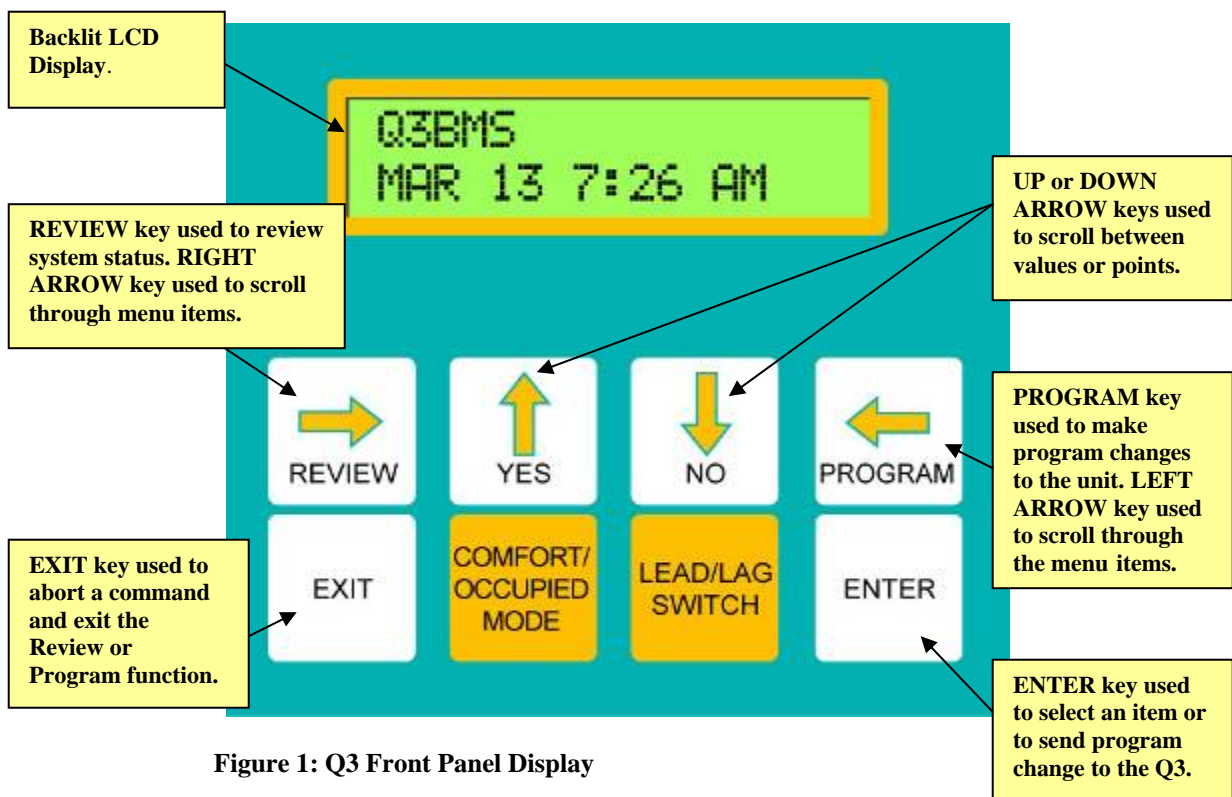


Figure 1: Q3 Front Panel Display

4.1.1 The LCD Display

When not in use, the backlit LCD display on the front panel shows the identification of the facility being monitored (ID.1) on the first line and the current date and time on the second line (Figure 2).

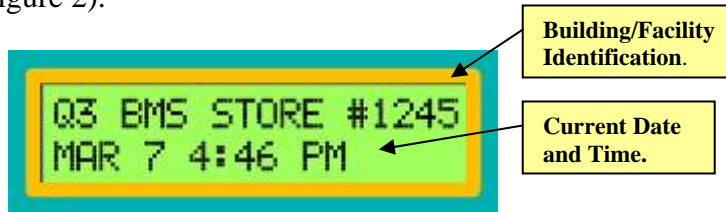


Figure 2: LCD Display

The system will cycle through a display of information such as current temperature and Humidity (Figure 3 and Figure 4). The user can select which information will be displayed on the LCD by programming the unit to display that information. Typically, all temperatures, humidity, and other analog readings are scrolled across the LCD display for easy viewing. For programming instructions, see the *Q3 User Manual: Programming the Unit*.

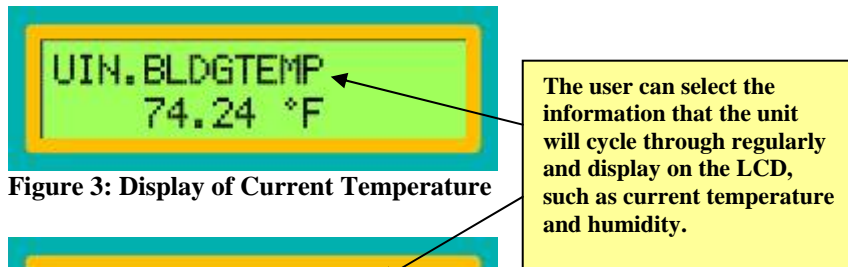


Figure 3: Display of Current Temperature



Figure 4: Display of Current Humidity

The LCD will also display alarm information if an active alarm has been generated. For example, if a temperature setpoint has been exceeded for a high temperature alarm (Figure 5) or if there has been a commercial power failure (Figure 6).

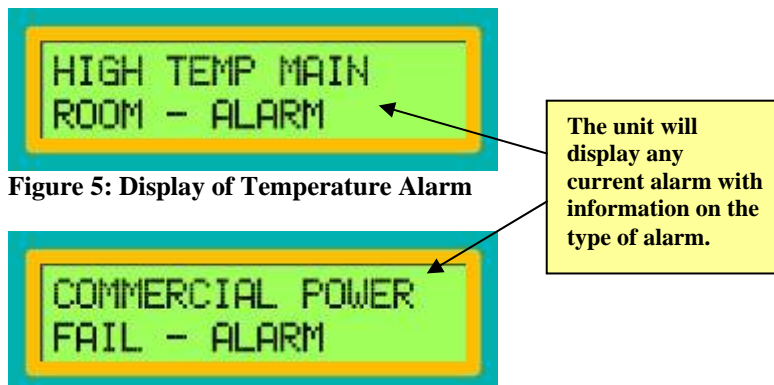


Figure 5: Display of Temperature Alarm



Figure 6: Display of Commercial Power Failure Alarm

4.1.2 The Review Key

Use the REVIEW key on the Front Panel Display to review system status.

Step 1: Press the **REVIEW** key. The LCD will prompt for which item you wish to review and display a menu of choices (Figure 7).



Figure 7: LCD Display of Review Menu

Step 2: Use the **RIGHT** arrow key to scroll through the following choices and the **LEFT** arrow key to scroll back. The cursor will flash on the items as you scroll through them:

UIN – name and status of universal input points that are being monitored
 RLY– name and status of digital outputs that are being controlled
 AOP– name and status of analog outputs
 DAT– date or holiday schedules
 TOD– time of day schedules
 EQU– list of program strategies
 VAR– list of program variables
 SPT – name and status of setpoints

Step 3: Choose the item you wish to review and press **ENTER**.

For example, if you choose **UIN** and press **ENTER**, the name of the first input will be displayed on the first line; the input value will be displayed on the second line (Figure 8).

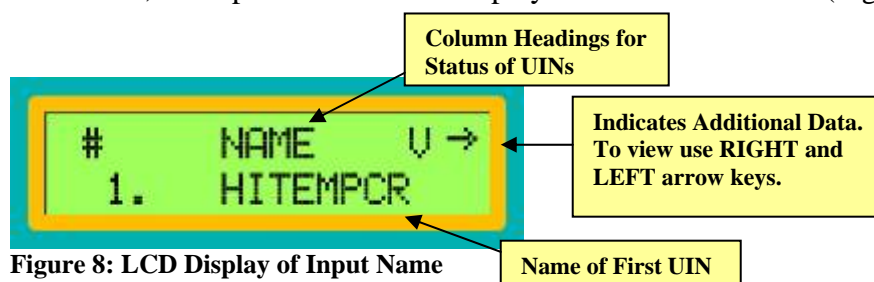


Figure 8: LCD Display of Input Name

Step 4: To view additional data for that input (indicated by arrows in the corner of the display), use the **RIGHT** and **LEFT** arrow keys to scroll through the data for that point.

Step 5: To view additional points or to scroll between different points, use the **UP** and **DOWN** arrow keys.

Step 6: To exit the item being reviewed press the **EXIT** key. ABORTED will be displayed on the LCD.

Step 7: To choose another item to review, press the **REVIEW** key again.

4.1.3 The Program Key

Use the PROGRAM key to make modifications to the Q3's program settings such as changing setpoints, bypassing outputs, and setting the clock. The Q3 requires a password for program access. The default password is MASTER. If you are unsure of what you are doing at this point, stop and get further instruction from your system administrator.

To make a program change,

Step 1: Press the **PROGRAM** key. The system will prompt for your password by displaying the password field (Figure 9).

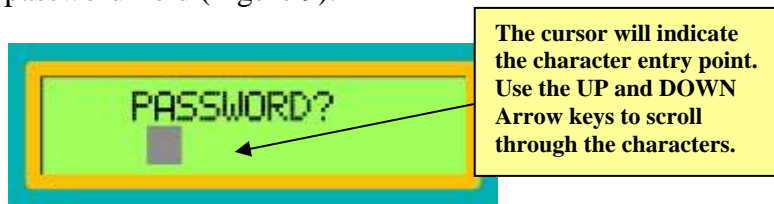


Figure 9: LCD Display of Password Prompt

Step 2: To enter your password, use the **UP** and **DOWN** arrow keys to scroll through the available letters and symbols at the first character entry until the first character of your password appears.

Step 3: Press the **RIGHT** arrow key to move to the next character. Continue entering the entire password.

Step 4: Press **ENTER** when you have finished entering your password. The display will show **OK** if the password is valid.

Step 5: Press the **PROGRAM** key again and the LCD will prompt you to select one of the following: setpoint, bypass, or clock.

Step 6: To scroll through the items, use the **RIGHT** arrow key. The cursor will flash on the current choice.

Step 7: To choose the item, Press **ENTER**.

CHANGING A SETPOINT

Step 1: Use the **RIGHT** or **LEFT** arrow key to choose **SETPNT** from the menu and press **ENTER**. The name of the first setpoint will be displayed (Figure 10).

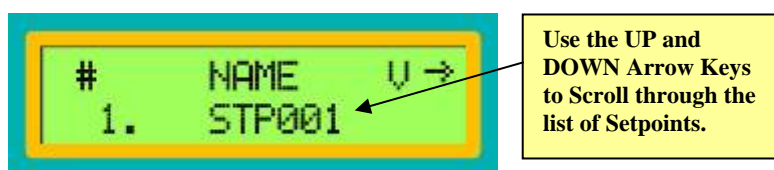


Figure 10: LCD Display of the First Setpoint

Step 2: Use the **UP** and **DOWN** arrow keys to scroll to the setpoint you wish to change and press **ENTER**. The current value of the setpoint will be displayed (Figure 11).

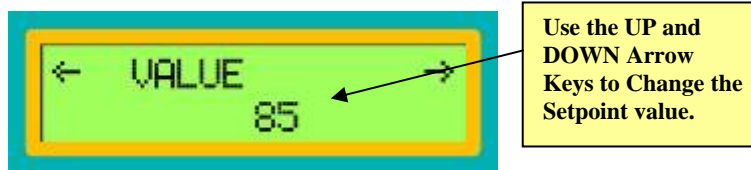


Figure 11: LCD Display of Value of Setpoint 1

Step 3: Use the **UP** and **DOWN** arrow keys to change the setpoint value. (If you do not wish to change the setpoint, press **EXIT** to abort your changes.) Press **ENTER** to make your change active. The LCD will display OK briefly and return to the setpoint list.

Step 4: Use the **UP** and **DOWN** arrow keys to select another setpoint or press **EXIT** to return to the main program screen.

BYPASSING OUTPUTS

Step 1: Use the **RIGHT** or **LEFT** arrow keys to choose **BYPASS** from the menu and press **ENTER**.

Step 2: Choose **RLY** or **AOP** and press **ENTER** (Figure 12). RLY is the acronym for digital output and AOP is the acronym for analog output. The name for relay one will be displayed.

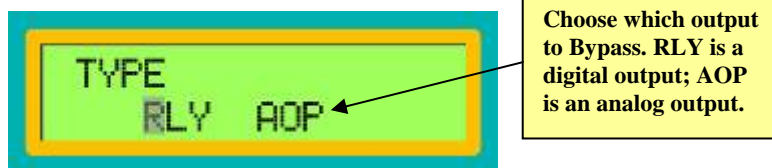


Figure 12: LCD Display Type of Output for Bypass

Step 3: Use the **UP** and **DOWN** arrow keys to scroll to the relay you wish to bypass and press **ENTER** (Figure 13).



Figure 13: LCD Display of the First Output

The display will show a choice of bypass options: ON, OFF or AUTO (Figure 14). If you choose ON or OFF, you will need to input the relay bypass time.

If you choose **AUTO** you will clear any bypass active at this time. Once you choose **AUTO**, press **ENTER**. The Q3 will restore the relay to its auto state and return to the initial display.



Figure 14: Choice of Bypass State

Step 4: To input the bypass time, use the **LEFT** and **RIGHT** arrow keys to move to each field and the **UP** and **DOWN** arrow keys to scroll through a numerical value (Figure 15).



Figure 15: Bypass Time Fields

The maximum time allowed is 23 hours and 59 minutes. (If you enter 00:00, the relay will be bypassed forever. In this state, you would need to bypass the relay to AUTO to clear the FOREVER bypass.)

Step 5: Once you have entered the bypass time, press **ENTER**. If the information is entered incorrectly, an **ERROR** message will be displayed. If the information is entered correctly, **OK** will be displayed and the relay will be bypassed.

Step 6: Press **PROGRAM** to return to the main program screen.

NOTE: When bypassing AOP, use the **AUTO** or **TO** choices. The **TO** choice allows you to specify a specific percentage output, i.e., if you bypass to 50% then the AOP will output a value of ½ of its range.

SETTING THE CLOCK

The System Clock is the internal clock in the Q3 that is used for all time functions. The clock must be set correctly so that the Q3 can process the time schedules properly.

Step 1: Use the **RIGHT** arrow key to choose **CLOCK** from the menu, press **ENTER**.

The system will prompt you to enter current month, date and year by displaying the month/day/year fields (Figure 16).

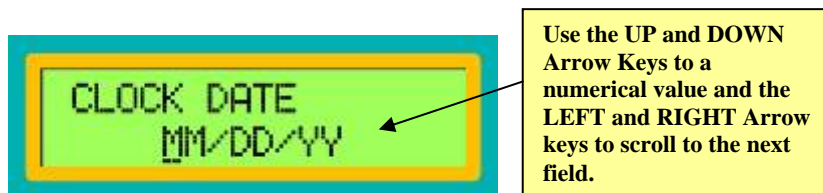


Figure 16: Date Fields for Setting Clock

Step 2: Enter the current month, date and year by using the **RIGHT** and **LEFT** arrow keys to move to each field and the **UP** and **DOWN** arrow keys to enter a numerical value. When you have entered the current date, press **ENTER**. The system will prompt you to enter the current time by displaying the time fields (Figure 17).

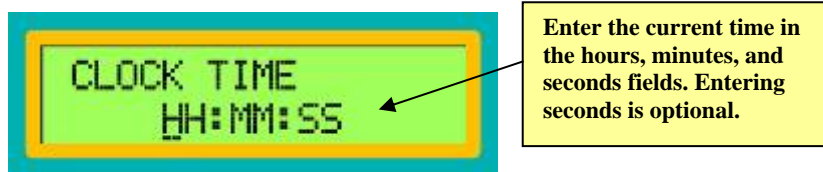


Figure 17: Time Fields for Setting Clock

Step 3: Enter the current time by using the **RIGHT** and **LEFT** arrow keys to move to each field and the **UP** and **DOWN** arrow keys to enter a numerical value. Entering a value for seconds (:SS) is optional. When you have entered the current time, press **ENTER**. If the information is entered correctly, OK will be displayed.

LOGGING OFF

Step 1: To log off of the front panel programming function, press the **EXIT** key twice. The Q3 will prompt you if you wish to LOG OFF (Figure 18).

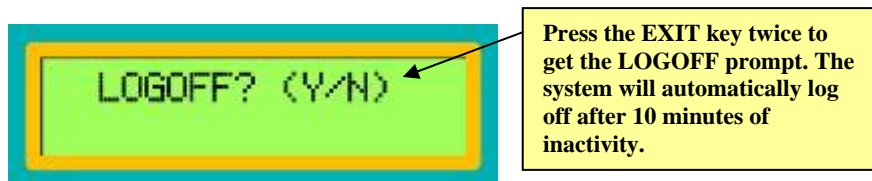


Figure 18: Log Off Prompt

Step 2: Press **YES** or the **UP** arrow key to log off the system at this time press. Press **NO** or the **DOWN** arrow key if you do not wish to log off at this time.

The Q3 will automatically log your password off if there is no activity on the keypad for 10 minutes.

4.2 Serial Port Communication

The user can communicate locally with the Q3 by connecting an RS232 cable from serial (craft) port connection on the unit to a laptop computer and using Terminal Emulation software such as HyperTerminal. *See Chapter 6 – Terminal Communication & Alarm Transport for instructions on serial port communication.*

Chapter 5 – Remote Web Server Communications

The Q3 energy management system's easy-to-use Web Server interface lets the user manage the system, review status and make simple programming changes through a web browser from any remote location with an IP network connection.

5.1 Accessing the Web Server

The Q3's factory default IP address is 192.168.1.31. (*See Section 5.13 Web Server Setting.*) If you have problems connecting with the site, check your network IP address settings.

Step 1: To access Web Server, open your Internet browser and type in the IP address.

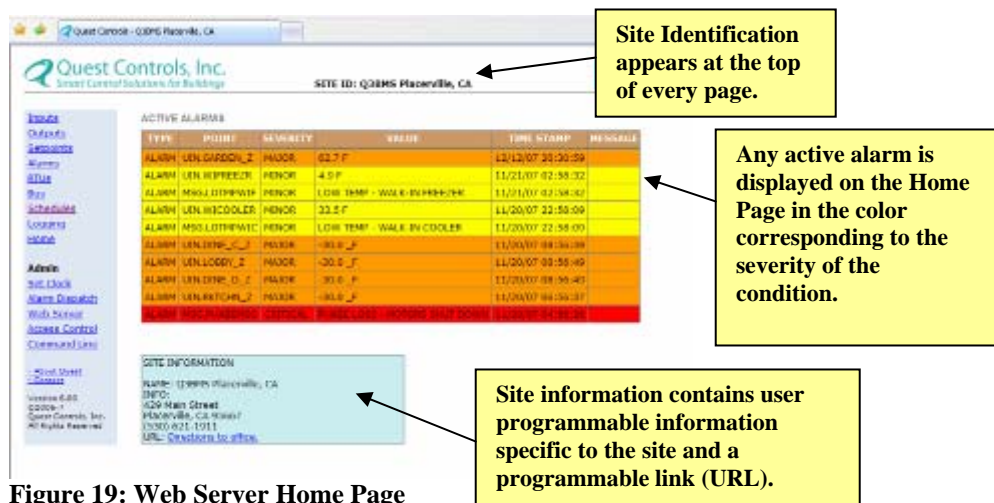
There are two Web Server password levels. The User password allows the user access to all of the navigation links except the Admin links. The Admin password allows access to the additional links under the Admin section of the Navigation bar, plus access to any web page that allows a system change or bypass.

The default username for User access is User (case sensitive) and the password is user. The default username for Admin access is Admin (case sensitive) and the password is admin. (*See Section 5.13 Web Server Setting to change your password.*)

Step 2: Enter the User Level username and password, press **ENTER**. The Web Server home page will be displayed.

5.2 The Homepage

The home page will always display any active alarm conditions as well as the Site Information. The site information displayed on the home page can be changed through the Web Server link on the navigation bar (*See Section 5.13 Web Server Setting*). You can return to the home page from any screen by clicking on the Home link on the navigation bar (**Figure 19**).



Site Identification appears at the top of every page.

Any active alarm is displayed on the Home Page in the color corresponding to the severity of the condition.

Site information contains user programmable information specific to the site and a programmable link (URL).

Figure 19: Web Server Home Page

5.3 Navigating the Site

The navigation bar on the left side of the screen shows a list of links that you will use to review the status of inputs and outputs, bypass outputs, review active alarms and alarm history, review history logs, review and change setpoints, monitor additional network modules, review and change date and time schedules, and change system settings. The following sections will discuss how to perform these actions using the links from the navigation bar (Figure 20). The links listed under Admin require an Admin username and password. (See Section 5.13 Web Server Setting.)



Figure 20: Web Server Navigation Bar

5.4 Inputs and Outputs

Your Q3 system has been programmed to gather information about your building's equipment and environment through strategically placed digital and analog input sensors. Digital inputs sense on or off conditions while analog inputs sense a range of measurement such as temperature or humidity.

In addition to sensing information through inputs, the Q3 has been programmed to automatically control devices using digital outputs. Digital outputs turn a connected device on or off according to your program's parameters. To manually control a device for a period of time you can bypass the output.

5.4.1 Reviewing Inputs

Step 1: To review all current inputs, Click on the [Inputs](#) link on the navigation bar.

The current status of all of the inputs in the system will be displayed (Figure 21). Each input will be shown with its physical location number, its name and its current reading.

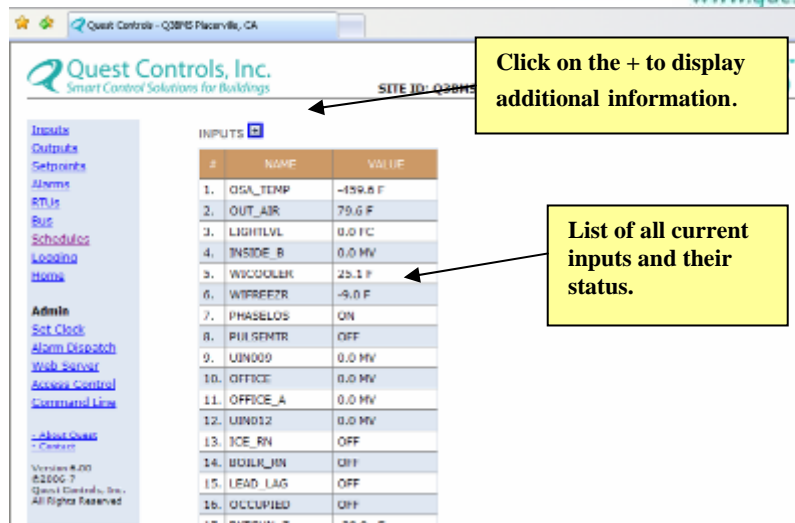


Figure 21: Current Inputs

Step 2: To refresh the page, click on the [Inputs](#) link again. The Q3 will refresh and display new values for each input.

Step 3: Click on the + next to INPUTS to display additional information (Figure 21).

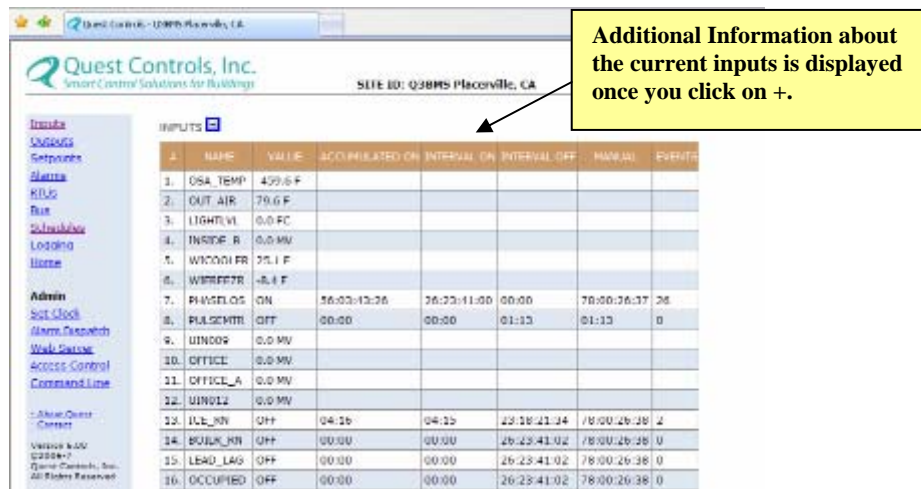


Figure 22: Expanded Current Inputs Information

In addition to physical location, name and current reading, the following information will be displayed (Figure 22):

- **ACCUMULATED ON** is the time accumulated on the timer. This timer will keep track of the total amount of ON time.
- **INTERVAL ON** is the interval ON time. When a point turns on the timer resets to zero and keeps track of how long the point has been on for the current interval.
- **INTERVAL OFF** is the interval OFF time. When a point turns off the timer resets to zero and keeps track of how long the point has been off for the current interval.
- **MANUAL** is the total time that has elapsed since the timers were manually reset to 0.

- EVENTS is the number of cycles that have occurred. Every time a point goes on or off counts as an event, thus there are two events for a complete cycle.

5.4.2 Reviewing Outputs

Step 1: To review current outputs, click on the [Outputs](#) link on the navigation bar. The Output screen will be displayed showing both digital outputs (RLY) and analog outputs (AOP) (Figure 23).

The RLY fields will show the outputs physical number, name, program status, actual status, and bypass time. The status column will either show automatic, meaning the status of the output is the programmed state or it will show the word ON or OFF indicating the bypass condition of the relay. If a point is in bypass, the time remaining on the bypass or the word FOREVER will appear in the bypass time column (Figure 23).

The AOP fields will show the name of the point, the current value, the percentage from 0 to 100% of the output and the bypass status (Figure 23).

Click on + to display additional Digital Output information.

Click on Bypass to display the Bypass Digital Output Window or the Bypass Analog Output Window.

Each Digital output will be listed with its physical number, name, program status, actual status and bypass time.

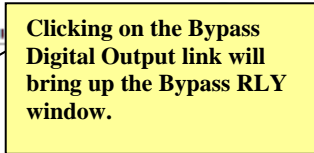
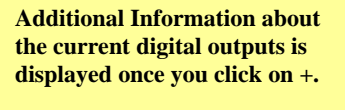
Each Analog output will be listed with its name, current value, the percentage of the output, from 0 to 100%, and the bypass status.

#	NAME	PROGRAM STATUS	ACTUAL STATUS	BYPASS TIME
1.	CUSTOMER	ON	AUTO	00:00
2.	EMPLOYEE	ON	AUTO	00:00
3.	EXTERIOR	ON	AUTO	00:00
4.	FRONTDOOR	OFF	AUTO	00:00
5.	RLY005	OFF	AUTO	00:00
6.	RLY006	OFF	AUTO	00:00
7.	RLY007	OFF	AUTO	00:00
8.	RLY008	OFF	AUTO	00:00
9.	RLY009	OFF	AUTO	00:00
10.	RLY010	OFF	AUTO	00:00
11.	RLY011	OFF	AUTO	00:00
12.	RLY012	OFF	AUTO	00:00
13.	RLY013	OFF	AUTO	00:00
14.	RLY014	OFF	AUTO	00:00
15.	RLY015	OFF	AUTO	00:00
16.	RLY016	OFF	AUTO	00:00

#	NAME	VALUE	PCT	BYPASS TIME
1.	DAMPER1	5.00	5	AUTO
2.	DAMPER2	47.00	47	AUTO

Figure 23: Current Outputs

Step 2: Click on the + next to DIGITAL OUTPUTS to view additional information for the current digital outputs (Figure 23).



Step 2: Use the drop downs to select the Relay or output number followed by the State (ON, OFF or AUTO) and then select either the time for the bypass to remain in effect or check the Forever box.

Note: When setting an output to AUTO, you do not need to select a time or click the Forever box.

Step 3: Once you have made your selections, click **DO BYPASS** to send your selections to the Q3. After the bypass, the system will show the updated output status page.

Bypassing an Analog Output

Step 1: Click on the [Bypass Analog Output](#) link from the Output screen (Figure 23). This will bring up the Bypass Analog Output window (Figure 26).

Step 2: Use the drop downs to select the AOP number to bypass, the percentage you want the output to be at (i.e. 50%) or AUTO to reset the output to automatic and the amount of time the bypass is to remain in effect or check the Forever box (Figure 26).

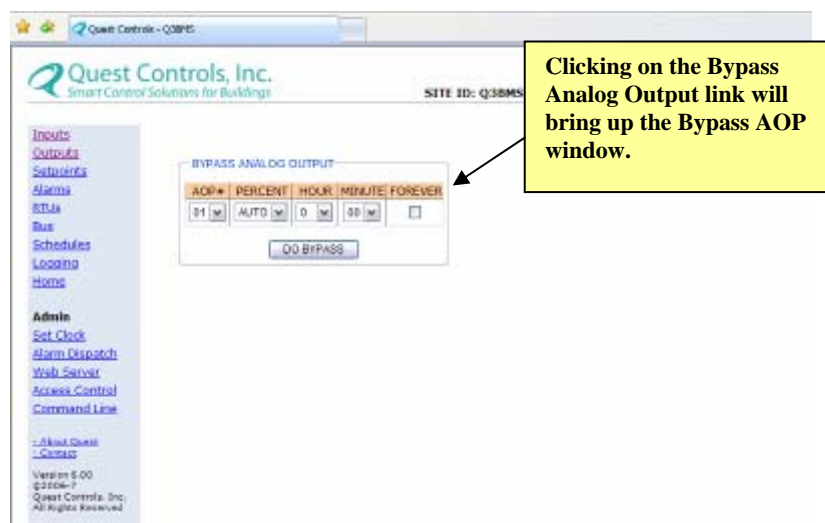


Figure 26: Bypass Analog Output

Step 3: Once you have made your selections, click **DO BYPASS** to send your selections to the Q3. After the bypass, the system will show the updated output status page.

5.5 Setpoints

Setpoints are used to monitor environmental and equipment conditions. The values of the inputs being monitored are compared with the setpoints to detect an alarm condition or make a control decision.

5.5.1 Viewing Setpoints

Step 1: To review the current setpoints, click on the [Setpoints](#) link. The status of the setpoints programmed in the system will be displayed (Figure 27). Each setpoint will have a number from 1 to 32, a unique name for the setpoint and the current value.

List of current setpoints showing the status of each setpoint.

#	NAME	VALUE
1.	KITCHEN	75
2.	OFFICE	74
3.	DINING_D	73
4.	BAF AREA	72
5.	LOBBY	73
6.	DINING_A	75
7.	DINING_C	73
8.	SPILL	72
9.	GARDEN	73
10.	COOLSTNS	82
11.	HEATSTNS	55
12.	PAN_RUM	1
13.	WATERSTN	8
14.	LOTSMEN	6
15.	KITCHEN	6
16.	DINING	4

Save your changes by clicking on the Save Changes to Flash link.

Click on the Setpoint Name to bring up the Change Setpoint window.

Figure 27: Current Setpoints

5.5.2 Changing Setpoints

Note: An Admin password is required change a setpoint. If you have not logged in with an Admin password, the system will prompt for the password.

Step 1: To change a setpoint, click on the [NAME](#) of the setpoint. This will bring up the Change Setpoint window (Figure 28).

Enter a new setpoint value in the box and click on the Change button.

Figure 28: Change Setpoint Window

Step 2: Enter a new value in the VALUE box and click on the **CHANGE** button to send the new value to the Q3. After the change, the system will show the updated setpoint status.

Step 3: After you have made all of your changes, click on the [Save Changes to Flash](#) link from the Setpoint screen to write the changes to the non-volatile flash memory. Save Complete will appear on the screen.

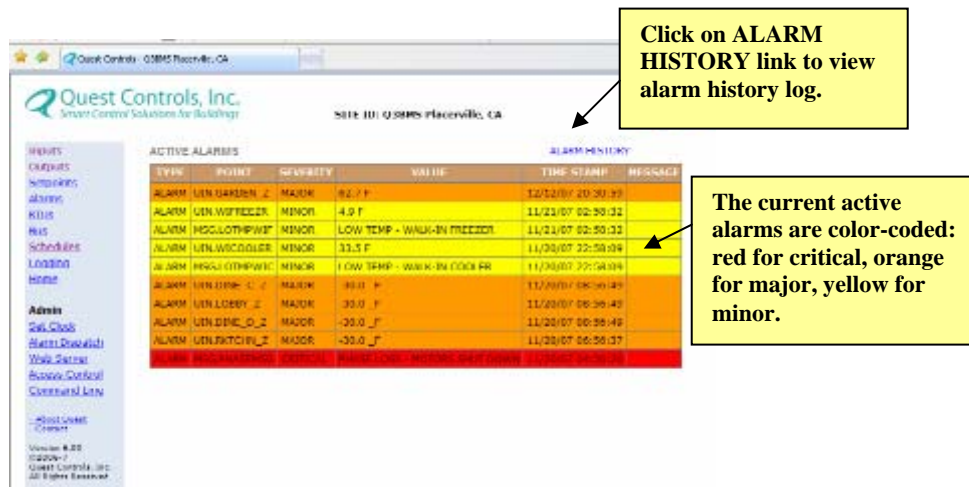
5.6 Alarms

The Q3 will automatically generate an alarm if a digital input has changed states, or an analog input does not match its setpoint value. The severity of the alarm and the type of notification can vary depending on the parameters programmed into the system.

5.6.1 Viewing Current Alarms

Step 1: To view current alarms, click on the [Alarms](#) link.

The current ACTIVE alarms in the system will be displayed (Figure 29). This is the same information that is displayed on the Home page. Each alarm will show the name of the input, the severity of the alarm, the time the alarm was triggered, and the condition that triggered the alarm. All alarms are color-coded based on their severity level. Critical alarms are red, major alarms are orange, and minor alarms are yellow.



Click on **ALARM HISTORY** link to view alarm history log.

The current active alarms are color-coded: red for critical, orange for major, yellow for minor.

TYPE	POINT	SEVERITY	VALUE	TIME STAMP	MESSAGE
ALARM	GEN DRYER_2	MAJOR	62.7 F	11/21/07 20:30:33	
ALARM	GEN WETFEED	MINOR	4.9 F	11/21/07 02:50:32	
ALARM	MSGLOTHPWR	MINOR	LOW TEMP - WALK-IN FREEZER	11/21/07 02:50:32	
ALARM	GEN WSCOOLER	MINOR	31.5 F	11/20/07 22:58:04	
ALARM	MSGLOTHPWR	MINOR	LOW TEMP - WALK-IN COOL FR	11/20/07 22:58:04	
ALARM	GEN LOBBY_1_2	MAJOR	40.0 F	11/20/07 08:36:40	
ALARM	GEN LOBBY_2	MAJOR	35.0 F	11/20/07 08:36:40	
ALARM	GEN DINE_O_2	MAJOR	<35.0 F	11/20/07 08:36:40	
ALARM	GEN DINE_O_2	MAJOR	<35.0 F	11/20/07 08:36:40	
ALARM	MSGLOTHPWR	MAJOR	LOW TEMP - WALK-IN COOL FR	11/20/07 08:36:40	

Figure 29: Current Alarms

5.6.2 Viewing Alarm History

Step 1: To view the alarm history log, click on the [ALARM HISTORY](#) link from the Alarms screen.

The alarm history log will appear in a new window and display the last 99 historical alarms starting with the most recent alarm at the top of the screen. The alarm entries will include messages when alarms clear in green and system notices such as power failures and local user logons will be in a white background (Figure 30).

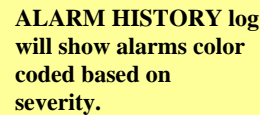


Figure 30: Alarm History Log

Step 2: Use the scroll bar to scroll down and see all historical alarms.

Step 3: Close the window when you are done reviewing the log by clicking on the X in the upper right corner.

5.7 RTU Controllers

Up to 16 RTU (Roof Top Unit) Controllers can be networked into the Q3 system to monitor a building's complete HVAC system.

5.7.1 Viewing RTU Status

Step 1: To view the status of all heating and air conditioning systems in the facility being monitored by Q3's RTUs, click the [RTUs](#) link. A list with the name of the RTU will be displayed along with status information for the HVAC unit being monitored by the RTU (Figure 31).

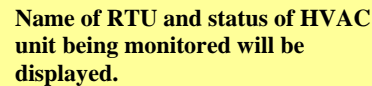


Figure 31: Status of All RTU

Step 2: To view a graphic of a particular RTU, click on the name of the RTU. The zone and supply sensor values are shown along with the on/off status of the fan, cooling,

heating and economizer (Figure 32). Items in Green are in the on condition and items in Red are in the off condition.

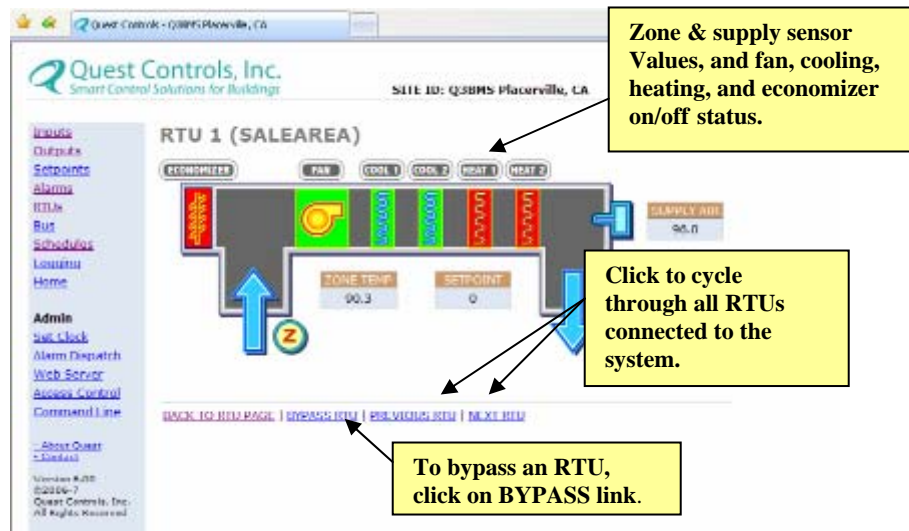


Figure 32: Graphic of a Single RTU

Step 3: To cycle through all systems, click on **PREVIOUS RTU** and **NEXT RTU** links.

Step 4: To go back to the main **RTU** page, click on the **BACK TO RTU PAGE** link.

5.7.2 Bypassing an RTU

Note: An Admin password is required to bypass an RTU. If you have not logged in with an Admin password, the system will prompt for the password.

Step 1: To bypass an RTU, click on the [BYPASS RTU](#) link from either the RTU status page or the RTU graphic page. The RTU Bypass window will be displayed (Figure 33).

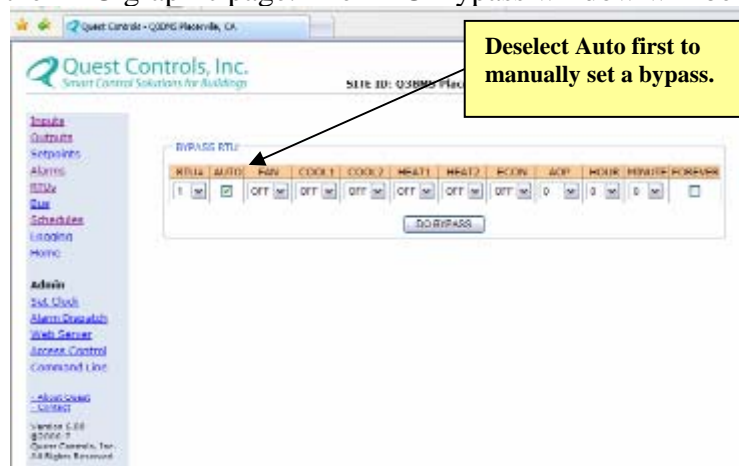


Figure 33: RTU Bypass Window

Step 2: Use the dropdowns to select the number of the RTU you want to bypass.

Step 3: Deselect AUTO by clicking on the check mark in the **AUTO** box (on by default to prevent errant results). To reset an RTU to automatic, click on the **AUTO** box.

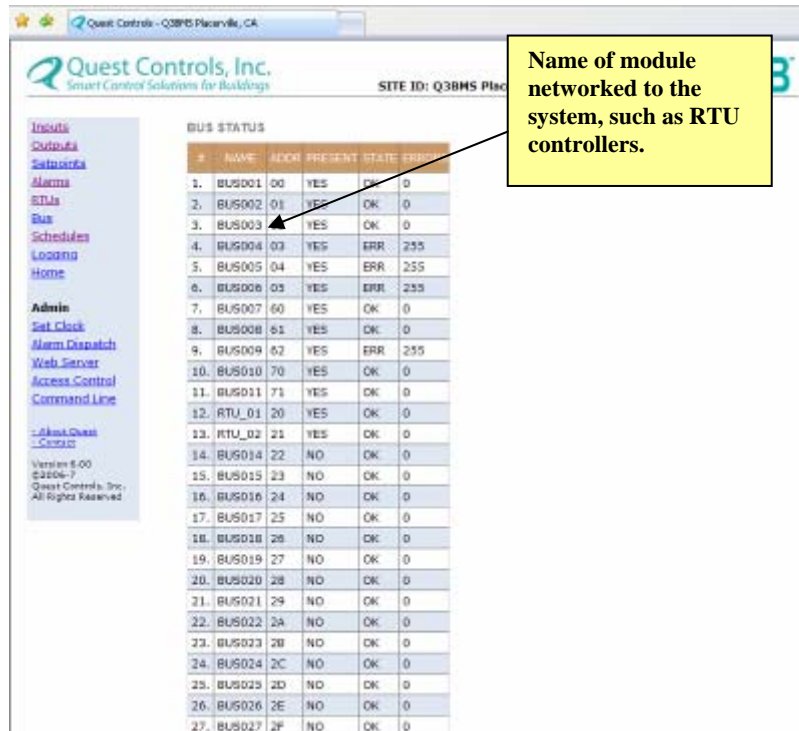
Step 4: To manually set a bypass, choose the on and off state you want for each stage of control. If you are using the analog output, you can select a percentage output.

Step 5: To send your bypass to the Q3, click the **DO BYPASS** button.

5.8 Bus Status

The Q3 system is expandable by adding network modules such as input, output and RTU controllers to the base system.

Step 1: To show which modules are connected to the system, click the [Bus](#) link. The BUS Status screen will display the modules that are connected to the system and if any of the modules are in communication error (Figure 34).



#	NAME	ADDR	PRESENT	STATE	ERRORS
1.	BUS001	00	YES	OK	0
2.	BUS002	01	YES	OK	0
3.	BUS003		YES	OK	0
4.	BUS004	03	YES	ERR	255
5.	BUS005	04	YES	ERR	255
6.	BUS006	05	YES	ERR	255
7.	BUS007	60	YES	OK	0
8.	BUS008	61	YES	OK	0
9.	BUS009	62	YES	ERR	255
10.	BUS010	70	YES	OK	0
11.	BUS011	71	YES	OK	0
12.	RTU_01	20	YES	OK	0
13.	RTU_02	21	YES	OK	0
14.	BUS014	22	NO	OK	0
15.	BUS015	23	NO	OK	0
16.	BUS016	24	NO	OK	0
17.	BUS017	25	NO	OK	0
18.	BUS018	26	NO	OK	0
19.	BUS019	27	NO	OK	0
20.	BUS020	28	NO	OK	0
21.	BUS021	29	NO	OK	0
22.	BUS022	2A	NO	OK	0
23.	BUS023	2B	NO	OK	0
24.	BUS024	2C	NO	OK	0
25.	BUS025	2D	NO	OK	0
26.	BUS026	2E	NO	OK	0
27.	BUS027	2F	NO	OK	0

Figure 34: Bus Status Screen

5.9 Time and Date Schedules

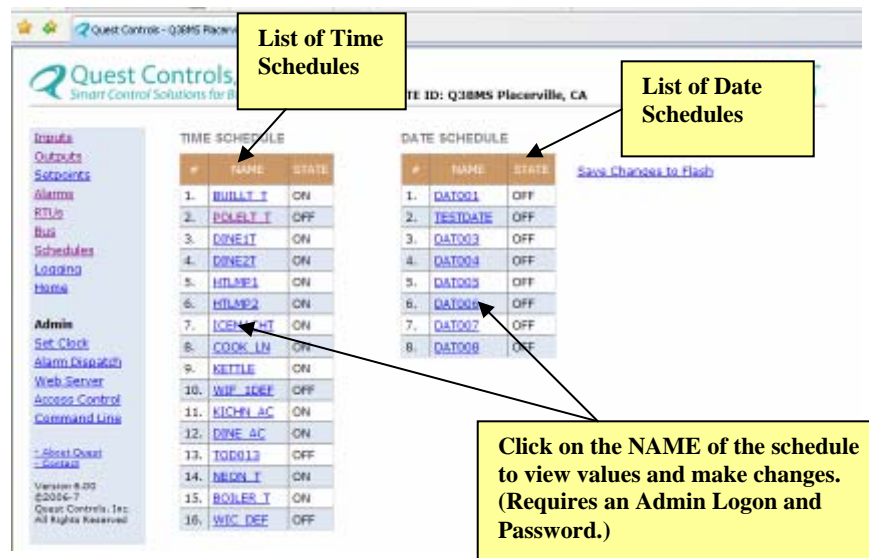
The Q3 has 16 time-of-day schedules that can be programmed to control the daily on/off function of the outputs. The eight date schedules are used to bypass the daily schedule for alternate or special dates, such as holidays. The date schedules can be programmed to be active on a single date, two dates or a range of dates.

5.9.1 Reviewing Current Schedule Status

Step 1: To review the current status of the Time of Day Schedules and the Alternate Date Schedules, click on the [Schedules](#) link. A list of time schedules and date schedules will be displayed (Figure 35).

Each point will have the schedule number followed by the name of the schedule and the ON/OFF status of that schedule.

Step 2: Click on the name of the schedule to see the program values of the schedule or to make changes to the schedule. (Requires the Admin password).



List of Time Schedules

#	NAME	STATE
1.	BUILT_I	ON
2.	BUILT_I	OFF
3.	DINE1T	ON
4.	DINE2T	ON
5.	HTLMP1	ON
6.	HTLMP2	ON
7.	ICECH_T	ON
8.	COOK_LN	ON
9.	KETTLE	ON
10.	WUP_1DEF	OFF
11.	KICHE1_AC	ON
12.	DINE_AC	ON
13.	TOD013	OFF
14.	HEDN_I	ON
15.	BOILER_I	ON
16.	WIC_DEF	OFF

List of Date Schedules

#	NAME	STATE
1.	DAT001	OFF
2.	TESTDATE	OFF
3.	DAT002	OFF
4.	DAT004	OFF
5.	DAT003	OFF
6.	DAT006	OFF
7.	DAT007	OFF
8.	DAT008	OFF

Click on the NAME of the schedule to view values and make changes. (Requires an Admin Logon and Password.)

Figure 35: List of Time and Date Schedules

5.9.2 Changing Time Schedules

Note: An Admin password is required change a time schedule. If the user has not logged in with an Admin password, the system will prompt for the password.

Step 1: To change a time schedule, click on the name of the Time Schedule. The Schedule Form Window for that time schedule will be displayed (Figure 36).

CHANGE TIME SCHEDULE

TOOL: NAME: BUILD: T

PRI	ACTION	TIME	SU	MO	TU	WE	TH	FR	SA	ALT DAY
1	ON	08:00 AM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OFF	11:00 PM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	OFF	11:55 PM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	NONE	12:00 AM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Clear Form SEND

Figure 36: Time Schedule Form Window

Step 2: Use the drop downs and check boxes to make changes to the schedule or click the CLEAR button to clear the form to start fresh.

Note: The ALT DAY column is used for assigning Date Schedule to the Time Schedule priority instead of a day of the week schedule. Use the [Change Date Schedule](#) link to program the ALT DAY schedule.

Step 3: Click the **SEND** button to transmit your changes to the Q3. The Q3 is not affected by changes in the field until the **SEND** button is clicked.

Step 4: Once you have made all of your changes, click [Save Changes to Flash](#) to save your changes to non-volatile flash memory.

5.9.3 Changing Date Schedules

Note: An Admin password is required change a date schedule. If you have not logged in with an Admin password, the system will prompt for the password.

Step 1: From the Review Schedule Status screen, click the NAME of the date schedule to change. The CHANGE DATE SCHEDULE window will be displayed (Figure 37).

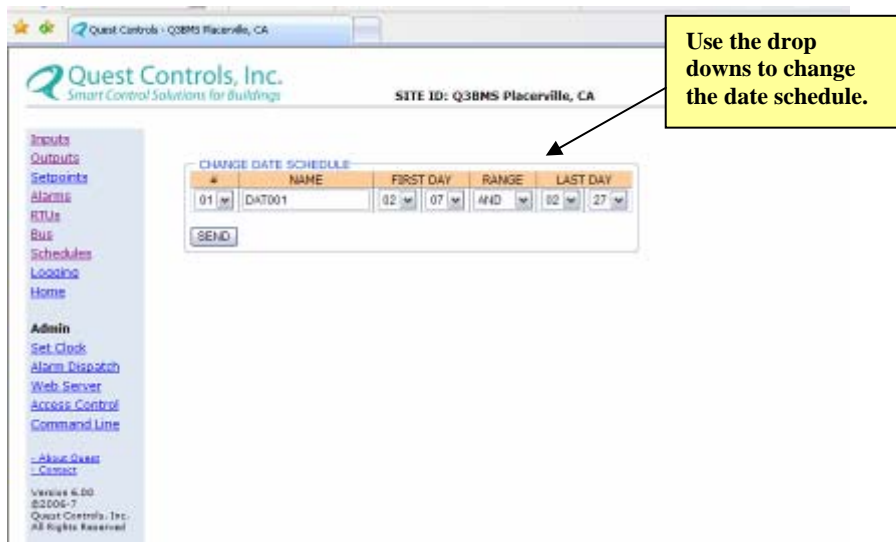


Figure 37: Change Date Schedule Window

Step 2: Use the drop downs to select the date schedule number and the dates on which the schedule will be active. Click the **SEND** button to transmit your changes to the Q3.

5.10 Viewing Inputs and RTU Log Information

You can display a graph of log information for any Input (up to 4 points) or RTU connected to the controller, or download a text file of the log.

Step 1: Click on the [Logging](#) Link in the navigation bar.

Step 2: Click on either the Input or the RTU button in the Retrieval Settings Window, and then select the point(s) to graph from the drop down menus (Figure 38).

Step 3: Choose the range by clicking the button next to Last 6 hours, Last 24 Hours, or Last 7 days (Figure 38).

Step 4: Click on Show Graph to display the graph (Figure 38).

Step 5: To download a text file of the data, click the Download File button (Figure 38).

Step 6: Choose view or save the file.

Note: To download a text file of the entire log, click on the EVERYTHING button in the Range Window. The maximum file size is approximately 20KB. If the log data you are requesting is larger than this size then the file will be truncated. For larger pullbacks requiring multiple sensors, use the Telnet session function and retrieve the log data.

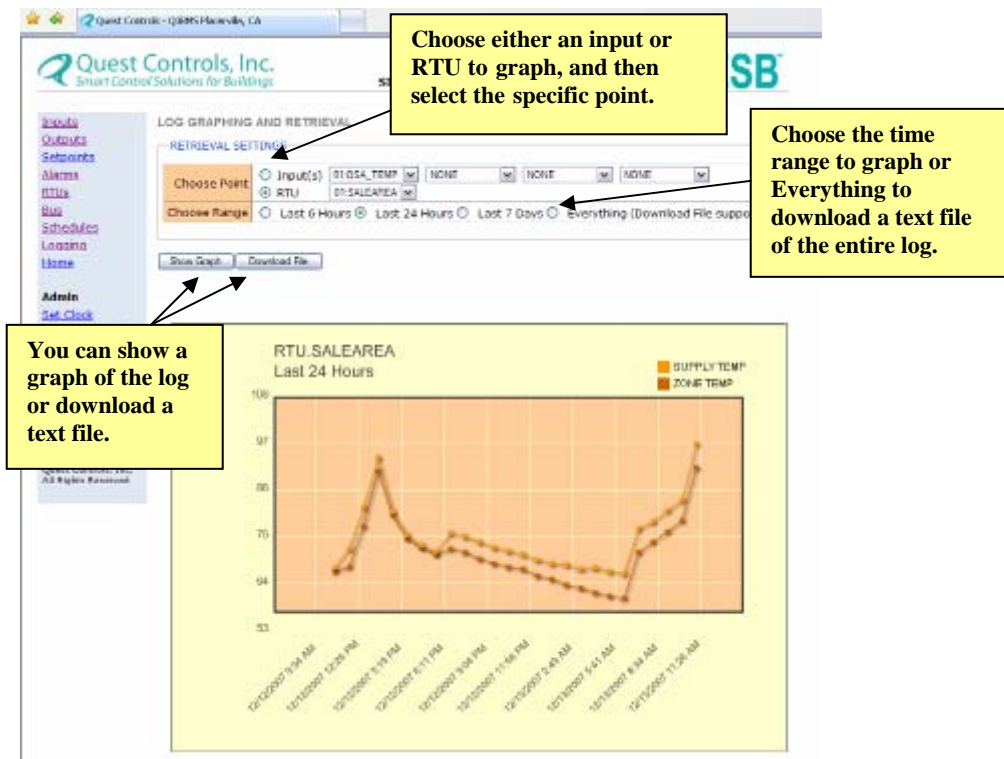


Figure 38: Logging Screen

5.11 Setting System Clock

Note: An Admin password is required set the System Clock. If you have not logged in with an Admin password, the system will prompt for the password.

The System Clock is the internal clock in the Q3 that is used for all time functions. The clock must be set correctly so that the Q3 can process the time schedules properly.

Step 1: To display the current date and time of the system clock, click on the [Set Clock](#) link. The Set Clock window will be displayed (Figure 39).

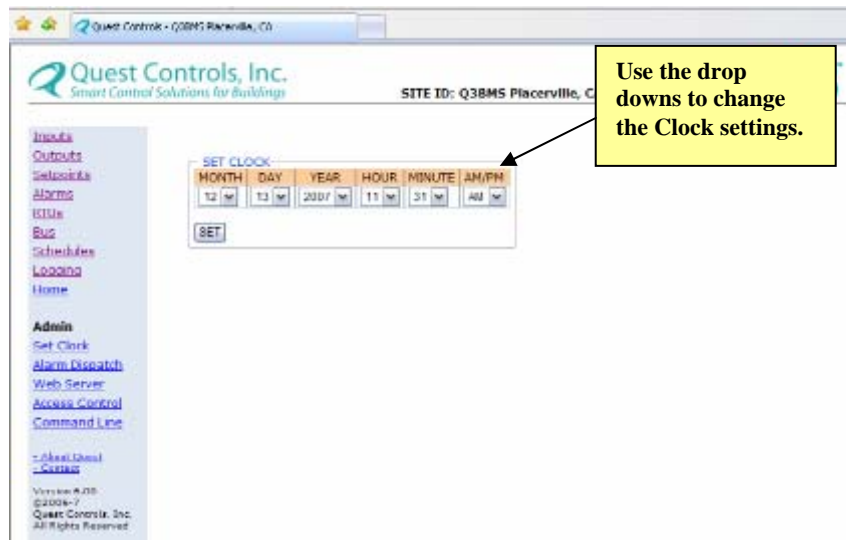


Figure 39: Set Q3 Clock Window

Step 2: Use the drop down boxes to change the date and time.

Step 3: Click the **SET** button to send the changes to the system clock.

5.12 Programming Alarm Notification

Note: An Admin password is required to program Alarm Notification. If you have not logged in with an Admin password, the system will prompt for the password.

The Q3 can send alarm notification via email or via SNMP traps.

Step 1: Click the [Alarm Dispatch](#) link to program alarm notification settings. Enter the Administration level username and password. The default username and password are Admin and admin. The setup screen for programming alarm dispatch settings will be displayed (Figure 40).

The screenshot shows the 'Alarm Dispatch' configuration screen. It includes sections for 'GLOBAL SETTINGS', 'EMAIL SPECIFIC PARAMETERS', and 'SNMP SPECIFIC PARAMETERS'. Callout boxes provide instructions for various fields:

- GLOBAL SETTINGS:**
 - Server Name or IP Address:** Enter the IP address using number/dot format or DNS name of the Email (SMTP) server. If you enter the DNS name, you must enter a DNS server IP address on the web server setup link.
 - SMTP Domain Name:** Some Email servers require a Domain name. Enter that value here if needed.
 - SMTP Authentication Username:** Enter username and password assigned to the Q3 if your server requires authentication.
 - Password:** Enter username and password assigned to the Q3 if your server requires authentication.
 - Email "From" Address:** Select a unique "From" address so you will know which Q3 unit sent the alarm.
 - SNMP Version:** Select the SNMP version you are using.
 - Outgoing SNMP Type:** Select either Traps or Informs for Outgoing SNMP type.
- EMAIL SPECIFIC PARAMETERS:**
 - SEVERITY FILTER:** A table with columns CR, MT, MN, IN, CL, SYS, ACC, and TIME SCHEDULE. It contains four rows of filter settings.
- SNMP SPECIFIC PARAMETERS:**
 - MANAGER IP:** A table with columns CR, MT, MN, IN, CL, SYS, ACC, and TIME SCHEDULE. It contains four rows of manager IP settings.

Buttons at the bottom include 'SAVE ALL' and 'ALARM TEST'.

Figure 40: Alarm Dispatch Screen

Step 2: Enter the information you wish to change in the appropriate fields.

GLOBAL SETTINGS: The first section of the screen is the GLOBAL SETTINGS section. These are the settings required to access the email (SMTP) server or the SNMP server on your network (Figure 40).

Enter the IP address of your email server and a domain name if required. Enter a unique from address to identify which Q3 unit emailed the alarm. Most email servers require the From name to include an @ and the domain name, example: Q3@questcontrols.com. Select the SNMP version (v1 or v2) you are using. Incoming and Outgoing SNMP ports are set with a default value that you can change. Setting the port to 0 will disable the port. SNMP community string is used in SNMPv2 for security. This value must be set to your network community string in order to do SNMP Gets and Sets. For Outgoing SNMP Type select either Traps or Informs. If Informs is selected then the system will wait for a response back that the alarm message was received. If no response is provided within approx. 5 seconds, the system will resend the alarm message.

EMAIL SPECIFIC PARAMETERS: The next section, EMAIL (Figure 41) allows you to enter email addresses for sending email alarms. There are four groups of emails. The distribution list for each group can be 120 characters long. Enter each address separated by a comma. Time-of-day (TOD) schedules are available to send an email alarm to that distribution list only if the time schedule is active.

The subject field allows you to enter a specific message that will be sent with every email alarm for that group. This message will be appended to the severity value, which will be the first item in the subject field, i.e. Critical - <your subject message> will be shown on the email subject line.

SNMP SPECIFIC PARAMETERS: The last section, SNMP SPECIFIC PARAMETERS (Figure 41), allows you to set the parameters for sending alarms via SNMP traps. Up to four IP addresses of trap servers can be programmed for sending the traps. The traps being sent to each server can be filtered for alarm severity and type. SYS types are system alarms and ACC types are access control notices. TOD qualifiers are available to send the alarm only to the trap server if the TOD schedule is active (ON).

Under Email Parameters and SNMP Parameters you can select the Severity Filter, Type of Filter and Time Schedule:

Severity Filters - You can specify what alarms are sent to this group:

CR = Critical Alarms

MJ = Major Alarms

MN = Minor Alarms

IN = Informational Notices such as heartbeat messages or access control card reader notices.

CL = Clear Alarm Messages

Type Filter - The type filter allows you to specify which types of alarms are sent. SYS alarms are system generated alarm conditions. ACC are access control notices when someone uses the card reader or keypad. Note: for ACC alarms, you must check IN and ACC to receive messages.

Time Schedule – You can specify when to use the group by specifying a time schedule. Assign the schedule number here and use the Schedules link to create or modify the schedule. Alarms will only be sent when the schedule is active or ON.

EMAIL SPECIFIC PARAMETERS

GROUP	DISTRIBUTION LIST	SUBJECT	SEVERITY FILTER					TYPE FILTER		TIME SCHEDULE
			CR	MD	MN	IN	CL	SYS	ACC	
1	lmichel@questcontrols.com	alarm monitoring dns disc	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NONE
2		alarm monitoring dns disc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NONE
		alarm monitoring dns disc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NONE
		alarm monitoring dns disc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NONE

SNMP SPECIFIC PARAMETERS

MANAGER IP	SEVERITY FILTER					TYPE FILTER		TIME SCHEDULE
	CR	MD	MN	IN	CL	SYS	ACC	
192.168.1.57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NONE
192.168.1.57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TOD.1
192.168.1.57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TOD.16
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TOD.2

Annotations:

- Enter the email address where alarms should be sent. A subject line can be added to the email.
- Check the boxes to select which alarm severity will be sent to which email and SNMP server address.
- Enter the IP address where the Alarms should be sent via SNMP.

Figure 41: Email and SNMP Specification Parameter Settings

Step 3: Click the **SAVE ALL** button to send your changes to the Q3.

5.13 Web Server Setting

Web Server settings for the Q3 are changed from the Web Server screen.

From this screen you can change the unit's IP address, change your password, and configure the options for TELNET and for displaying site information.

Note: An Admin password is required to change Web Server settings. If the user has not logged in with an Admin password, the system will prompt for the password.

Step 1: To change Web Server setting, click on the [Web Server](#) link. The Web Server Settings screen will be displayed (Figure 42).

The screenshot shows the 'WEB SERVER SETTINGS' page. It includes a navigation bar on the left with links like 'Inputs', 'Outputs', 'Schedules', 'Admin', etc. The main content area has several sections: 'IP ADDRESS' with fields for IP, Subnet, Gateway, and DNS Server, and a checkbox for DHCP; 'TELNET' with fields for Port and Timeout; 'ACCESS' with fields for Username and Password; and 'SITE INFORMATION' with fields for ID, Name, Address, and URL. Four yellow callout boxes provide instructions: 1. 'Enter IP address, subnet, gateway and DNS Server addresses for your network. If you use DHCP, check the box. If the Q3 cannot locate the DHCP server it will default to the static address you assign.' 2. 'The Q3 supports TELNET for full system programming. Note: A port number of 0 will disable TELNET and a timeout of 0 will disable the timeout delay.' 3. 'Change the default Username and password by entering new values. The Admin password allows access to the Admin links in the navigation bar.' 4. 'Site information appears in the header (ID) and in the blue Site Information box on the home page. A URL link can be programmed to redirect the user to another web page.'

Figure 42: Web Server Setting Screen

Step 2: To change one of the following settings, enter the new information in the appropriate section of the Web Server Settings Screen:

Changing IP address: Enter new IP address in the IP ADDRESS field. You can also set subnet, gateway and DNS Server addresses for your network by entering that information in the respective fields. If you are using DHCP or Static DHCP on your network, you can check the DHCP box and the system will request and address gateway, subnet and DNS server information from your router.

Changing the TELNET Port Number: Enter the new port number in the PORT# field (the default port is 23). Set a timeout delay in minutes by entering in a numerical value in the TIMEOUT field. A timeout value of 0 will disable the timeout function.

Changing Password: There are two passwords available for the Q3. The User password allows the user access to all of the navigation links except the Admin links. The Admin password allows access to the additional three links under the Admin section of the Navigation bar plus any page that allows a program change or bypass. Enter a user name and password for the different levels. To change either password, enter the new username in the USER field or the ADMIN field and the password in the PASSWORD field. (The fields are case sensitive.) Enter the new password again in the CONFIRM PASSWORD field.

Changing Site Information: The Site Information is displayed on the HOME page in the header and in the Site Information box. Enter the new information in the ID and INFO fields in the Site Information section of the screen. If you wish to display on the Homepage a URL that will link the user to another web page such as directions to the site, inventory web page, etc., type the name of the URL in the URL NAME field. Enter the actual link in the URL link field.

Step 3: To save your changes, click the **SAVE** button. Your changes will be transmitted to the Q3 and the unit will restart with the new settings. A page saying, “**Restarting System...you may reconnect in 30 seconds**” will appear if your changes are accepted. If your changes are not accepted, the Web Server Setup page will reappear with the previous settings.

5.14 Door Access Control

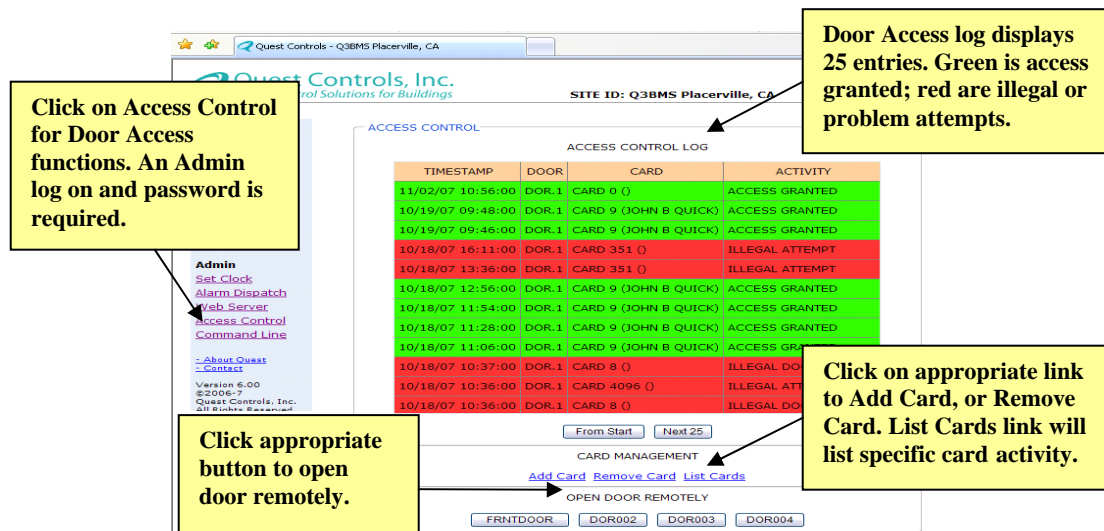
If your Q3 is set up for door access control, you can view the Door Access log, add or remove an access card, view card activity and open a door remotely; all through the Web Server by clicking on the Access Control link on the navigation bar (Figure 43).

Note: An Admin password is required use the Access Control link. If you have not logged in with an Admin password, the system will prompt for the password.

5.14.1 Viewing Door Access Log

Step 1: Click on the Access Control link on the navigation bar. The Door Access Screen will be shown (Figure 43).

The access log will be displayed on the screen. The access log shows 25 entries at a time. The entries are color coded so that green are access granted messages and red are illegal attempts or problem entries (Figure 43).



The screenshot shows the Quest Controls web interface for Door Access Control. The left navigation bar has a link for 'Access Control'. The main area displays the 'ACCESS CONTROL LOG' with a table of 25 entries. The table has columns for Timestamp, Door, Card, and Activity. Green rows indicate 'ACCESS GRANTED' and red rows indicate 'ILLEGAL ATTEMPT'. Below the table are buttons for 'From Start', 'Next 25', and 'CARD MANAGEMENT'. Under 'CARD MANAGEMENT' are links for 'Add Card', 'Remove Card', and 'List Cards'. At the bottom are buttons for 'OPEN DOOR REMOTELY' and specific door IDs like 'FRNTDOOR', 'DOR002', 'DOR003', and 'DOR004'.

Click on Access Control for Door Access functions. An Admin log on and password is required.

Door Access log displays 25 entries. Green is access granted; red are illegal or problem attempts.

Click appropriate button to open door remotely.

Click on appropriate link to Add Card, or Remove Card. List Cards link will list specific card activity.

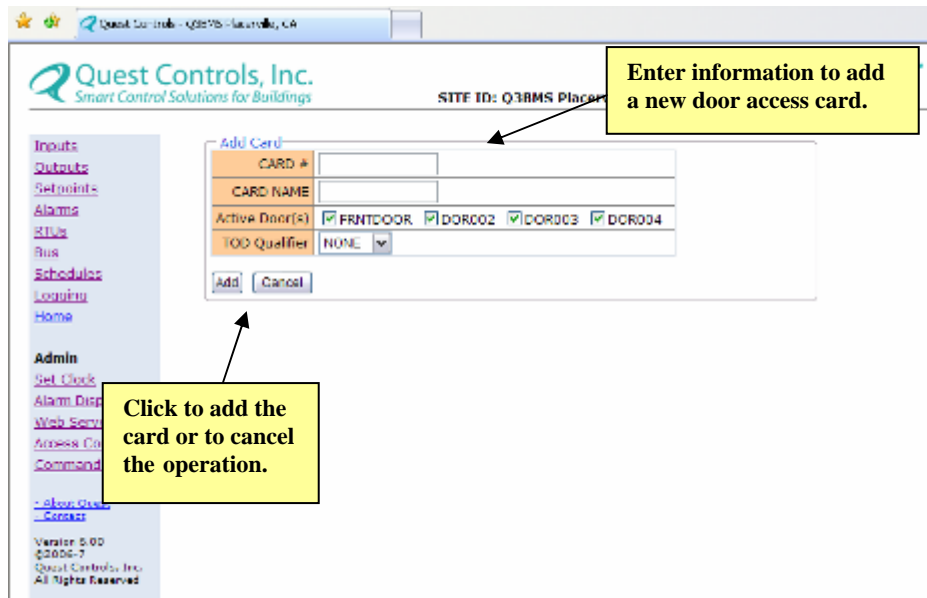
TIMESTAMP	DOOR	CARD	ACTIVITY
11/02/07 10:56:00	DOR.1	CARD 0 ()	ACCESS GRANTED
10/19/07 09:48:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/19/07 09:46:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/18/07 16:11:00	DOR.1	CARD 351 ()	ILLEGAL ATTEMPT
10/18/07 13:36:00	DOR.1	CARD 351 ()	ILLEGAL ATTEMPT
10/18/07 12:56:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/18/07 11:54:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/18/07 11:28:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/18/07 11:06:00	DOR.1	CARD 9 (JOHN B QUICK)	ACCESS GRANTED
10/18/07 10:37:00	DOR.1	CARD 8 ()	ILLEGAL DO
10/18/07 10:36:00	DOR.1	CARD 4096 ()	ILLEGAL AT
10/18/07 10:36:00	DOR.1	CARD 8 ()	ILLEGAL DO

Figure 43: Door Access Screen

Step 2: To see the next 25 entries, click on the NEXT 25 button.

5.14.2 Adding an Access Card

Step 1: Click on the Add Card Link from the Door Access screen (Figure 43). The Add Card Screen will be displayed (Figure 44).



Enter information to add a new door access card.

Click to add the card or to cancel the operation.

Figure 44: Add Card Screen

Step 2: Enter the Card # in the Card# field.

Step 3: Enter a 16-character name for the person the card is assigned to in the CARD NAME field.

Step 4: Select the doors the card will open in the Active Door(s) field.

Step 5: Select a time schedule if you want to limit the hours that this person has access to the site in the TOD Qualifier field.

Step 6: Click the Add button to add the card, or the Cancel button to cancel the operation.

5.14.3 Removing an Access Card

Step 1: Click the Remove Card Link from the Door Access screen (Figure 44). The Remove Card Screen will be displayed (Figure 45).



Figure 45: Remove Access Card Screen

Step 2: Enter the card # to be removed in the CARD # field.

Step 3: Click the Delete button to remove the access card, or the Cancel button to cancel the operation.

5.14.4 List All Active Cards

Step 1: Click on the List Cards link from the Door Access Screen (Figure 43). A list of all cards active in the system will be displayed with the card number, the name of the person issued the card, and the doors the person has access to open (Figure 46).

Card List

NUMBER	TOD	DOOR(s)	NAME
17	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
200	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
300	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
400	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
500	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
600	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
700	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
800	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
900	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1000	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1100	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1200	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1300	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1400	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1500	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K
1600	NONE	DOR.1 DOR.2 DOR.3 DOR.4	THIS IS A TEST K

Figure 46: List Card Screen

5.14.5 Opening a Door Remotely

Step 1: Click the Open Door Remotely button on the Door Access Screen (Figure 43). Click on the door number you wish to open remotely. The door will open for the predefined delay limit set in the Define Door command (*Section 7.4 Providing Remote Access*).

5.15 Command Line

The Command Line link will start your default Telnet Client on your pc and attempt to establish a Telnet link with the Q3. Refer to Microsoft's knowledge base on setting your default Telnet client if you need to set it and or change the client you would like to use. If you are using IE7 or Windows® Vista® you will need to make a registry tweak to launch a Telnet session from your browser. Consult Microsoft's Knowledge base for making these changes.

Note: An Admin password is required to use the Command Line link. If you have not logged in with an Admin password, the system will prompt for the password.

Step 1: To send commands to the Q3, click the Command Line Link from the Navigation bar (Figure 20).

Step 2: Enter the Admin Level username when the Q3 prompts you for a username. Enter the Admin Level password at the password prompt (Figure 47).

Step 3: Enter Q3 commands at the command prompt to program and or retrieve status. Refer to section 6 for a list of available commands.

Step 4: Close your Telnet Client when you are finished to terminate the session.

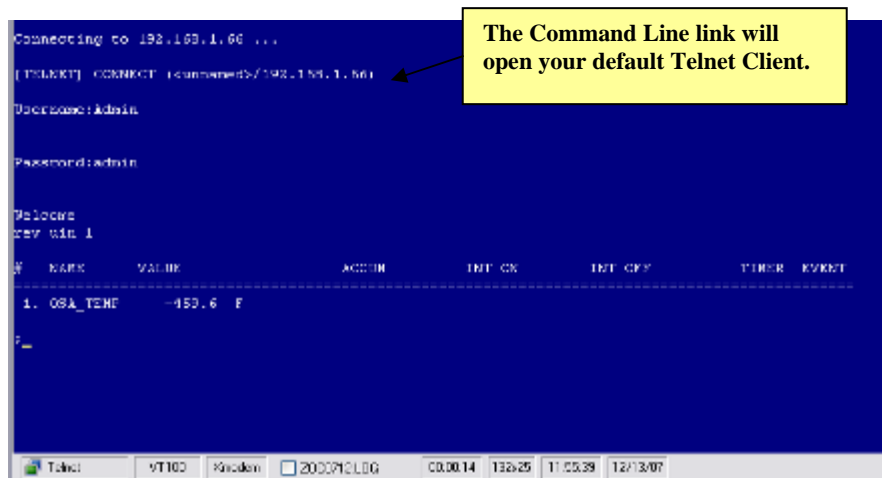


Figure 47: Sample Telnet Client Screen

Chapter 6 – Terminal Communication & Alarm Transport

There are two methods of communicating with the Q3 using a terminal communications program such as HyperTerminal. The user can communicate locally, using the serial (craft) port connection on the unit or remotely using a dial-up modem or Telnet over an Ethernet connection.

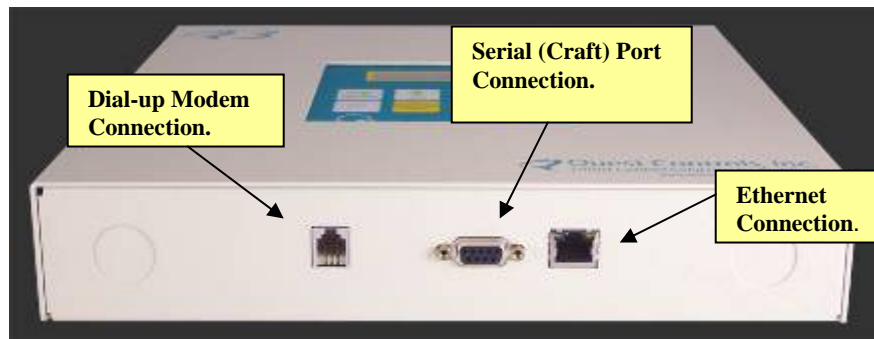


Figure 48: Bottom Panel of Q3

6.1 Connecting for Local Terminal Communication

Step 1: Connect the serial port on the bottom panel of the Q3 to the serial port of a laptop using the 9-pin RS232 cable (Figure 48).

Step 2: Log onto your computer's Terminal Emulation program such as HyperTerminal.

Step 3: Set the communication settings to 9600-baud, 8 data bits and 1 stop bit and no parity. Press Enter. The Q3 will prompt you for your password.

Step 4: Type your assigned password and press **ENTER**. The default password is MASTER.

If you fail to enter a valid password when connecting through the serial port, the system will continue to prompt for a valid password. Once a valid password is entered, the system identification information will appear on the screen with the current time and date.

The Q3 is now in Command Line Mode and ready to accept commands. (See 6.3 Basic Commands and Functions Using Command Line Mode.) When finished, disconnect your terminal and the Q3 will log you out. If the Q3 senses no activity after 10 minutes, it will log you out.

6.2 Connecting for Remote Terminal Communication

There are two options for remote terminal communication with the Q3 system, through a dial-up modem or Telnet through an Ethernet connection. Your system is configured from the factory to support one or both of these options.

6.2.1 Connecting for Modem Communication

To communicate with the Q3 via dial-up modem you need an AT command set compatible modem on the other end with communications software to handle the call. Any off the shelf package will do. For an approved vendor list, contact your Quest representative. The Q3 modem will connect using the highest negotiated speed. Be certain the calling modem is set to use error correction and data compression.

Step 1: Connect the telephone cable from the phone jack to the phone port on the Q3 (Figure 48).

Step 2: Using your computer's terminal communication program, select modem connection and enter the phone number assigned to the Q3's modem.

The phone should ring once and the Q3 will answer. The Q3 will prompt for a password. This will be the same password used for direct cable connection. The default username is MASTER. You have 10 seconds to enter a valid password, otherwise the Q3 will consider the lack of response to be an invalid password and the modem will disconnect.

Step 3: Enter your password and press **ENTER**. If you fail to enter a valid password in one attempt, the modem will disconnect. Once a valid password is entered, the Q3 is ready to accept a command. (See 6.3 Basic Commands and Functions Using Command Line Mode.)

When finished with the Q3, simply hang-up (drop DTR to) the modem using your communications software or issue the HANGUP command; the Q3 will log out. If the Q3 senses no modem activity after a 10-minute period, it will hang-up the modem and log out.

6.2.2 Connecting for Ethernet Communication

Step 1: Connect your Ethernet cable to the Ethernet port on the Q3 (Figure 48).

Step 2: Using your computer's terminal communication (Telnet) program, select TCP/IP and enter the IP address. The Q3 will prompt for a Username and Password.

Step 3: Enter your username and password. This will be the same username/password combination used for web browser connection. The default username is Telsec and the password is tseuq.

Once a valid password is entered, the Q3 is ready to accept a command. (See section 6.3 Basic Commands and Functions Using Command Line Mode.)

6.3 Basic Commands and Functions Using Command Line Mode

Once the Q3 has been programmed, you can enter some basic commands via local or remote terminal communication using a terminal emulation program such as HyperTerminal to review data and make simple program changes. (For more information

on programming the Q3, refer to the *Q3 User Manual: Programming the Unit.*) The following sections will review those commands.

6.3.1 Reviewing Inputs

Step 1: To review the current status of all universal inputs enter,

REV UIN and press **ENTER**

- **REV** is an abbreviation for REVIEW. You can also enter **REVIEW**.
- **UIN** is the acronym for universal input.

A list of the current inputs will be displayed on the screen (Figure 49) with the following information:

- **#** is the number of the Universal Input.
- **NAME** is the name assigned to the Universal Input.
- **VALUE** is current value of the Input.
- **ACCUM** is the time accumulated on the timer. This timer will keep track of the total amount of ON time.
- **INT ON** is the interval ON time. When a point turns on the timer resets to zero and keeps track of how long the point has been on this time.
- **INT OFF** is the interval OFF time. When a point turns off the timer resets to zero and keeps track of how long the point has been off this time.
- **TIMER** is the total time that has elapsed since the timers were reset to 0.
- **EVENT** is the number of cycles that have occurred. Every time a point goes on or off counts as an event, thus there are two events for a complete cycle.

#	NAME	VALUE	ACCUM	INT ON	INT OFF	TIMER	EVENT
1.	OSA_TEMP	89.6F					
2.	LIGHTLVL	890.0FC					
3.	ICE_RN	OFF	00:00	00:00	14:01:05:30	15:04:25:31	0
4.	BOILR_RN	OFF	00:00	00:00	14:01:05:31	15:04:25:32	0
5.	WICOOLER	39.6F					
6.	WIFREEZR	1.5F					
7.	PHASELOS	OFF	00:00	00:00	14:01:05:31	15:04:25:32	0
8.	PULSEMTR	OFF	00:00	00:00	14:01:05:31	15:04:25:32	0
9.	WICDISCH	129.5F					
10.	WIFDISCH	89.6F					
11.	WIC_CMPR	OFF	00:00	00:00	14:01:05:31	15:04:25:32	0
12.	WIF_CMPR	OFF	00:00	00:00	14:01:05:31	15:04:25:32	0

Figure 49: Current Universal Inputs

Step 2: To review a single point, select points, or a range of input points, enter

REV UIN <input number(s)> and press **ENTER**

For example,

- If you enter, **REV UIN 1**, input 1 will be displayed.
- If you enter, **REV UIN 2, 5, 10-13**, inputs 2, 5, and 10 through 13 will be displayed.
- If you enter, **REV UIN 1-10**, inputs 1 through 10 will be displayed.

6.3.2 Reviewing Outputs

Step 1: To review the current status of all digital outputs, enter **REV RLY** and press **ENTER**

- **RLY** is the acronym for outputs.

A list of the current outputs will be displayed on the screen (Figure 50) with the following information:

- **#** is the number of the relay.
- **NAME** is the name assigned to the relay.
- **PRG** is what the program is telling the point, to be, on or off.
- **STAT** is the actual status of the relay. Auto means it is following the program state. ON or OFF is the bypass condition.
- **BYPASS** is the amount of time remaining on the bypass or the word FOREVER meaning it must be manually cleared.
- **ACCUM** is the time accumulated on the timer. This timer will keep track of the total amount of ON time.
- **INT ON** is the interval ON time. When a point turns on the timer resets to zero and keeps track of how long the point has been on this time.
- **INT OFF** is the interval OFF time. When a point turns off the timer resets to zero and keeps track of how long the point has been off this time.
- **TIMER** is the total time that has elapsed since the timers were reset to 0.
- **EVENT** is the number of cycles that have occurred. Every time a point goes on or off counts as an event, thus there are two events for a complete cycle.

#	NAME	PRG	STAT	BYPASS	ACCUM	INT ON	INT OFF	TIMER	EVENT
1.	DINELTS1	ON	AUTO	00:00	12:12:13:56	13:20:50	4:44:59	15:04:28:51	26
2.	DINELTS2	ON	AUTO	00:00	11:17:39:49	13:20:49	5:15:00	15:04:28:51	30
3.	EXTSIGNS	ON	AUTO	00:00	3:22:16:37	20:47	18:00:03	15:04:28:51	33
4.	PATIO_LT	ON	AUTO	00:00	11:17:35:58	13:20:47	5:15:01	15:04:28:51	34
5.	BLDNG_LT	ON	AUTO	00:00	3:22:15:47	20:44	18:00:06	15:04:28:51	33
6.	PARKPOLE	ON	AUTO	00:00	5:21:07:48	20:38	17:01:10	15:04:28:51	29
7.	WI_COOLR	OFF	AUTO	00:00	03:40	03:40	14:01:06:46	15:04:28:52	2
8.	WI_FRZR	OFF	AUTO	00:00	03:40	03:40	14:01:06:46	15:04:28:52	2

Figure 50: Current Digital Outputs and Their Status

Step 2: To review a single point, select points, or a range of output points enter,

REV RLY <output #'s> and press **ENTER**

For example,

- If you enter, **REV RLY 1**, output 1 will be displayed.
- If you enter, **REV RLY 2, 5, 10-13**, outputs 2, 5, and 10 through 13 will be displayed.
- If you enter, **REV RLY 1-10**, outputs 1 through 10 will be displayed.

6.3.3 Bypassing Outputs

Bypassing an output overrides the program and forces the RLY (output) on or off for a period of time or forever.

Step 1: To bypass an output enter,

BYP RLY <RLY #> <STATE> <HH:MM> and press RETURN.

- **RLY#** is the output number.
- **STATE** is the bypass state. You can choose ON, OFF, or AUTO.
- **HH:MM** is the time you want the bypass to be in affect. A bypass time of 0 will put the output into bypass indefinitely and will have to be manually cleared by using the bypass command to set the output to AUTO.

For example, to bypass RELAY 1 off for 2 hours, enter, **BYP RLY 1 OFF 2:00**. The Relay will revert back to automatic once the bypass period times out.

NOTE: Entering a time of 0 will set the output in the bypass state to FOREVER.

Step 2: To clear a bypass enter,

BYP RLY <RLY #> <AUTO> and press **RETURN**

The output will return to automatic.

For example, if you wanted to return Relay 1 to its auto state before the 2 hours have timed out, you would type in **BYP RLY 1 AUTO**.

Every time the BYPASS command is issued successfully, an entry will be recorded in the alarm log reflecting the result.

6.3.4 Reviewing AOP

Step 1: To review the current status of all AOP enter,

REV AOP and press **ENTER**

AOP is the acronym for analog output.

A list of the current AOPs will be displayed on the screen (Figure 51) with the following information:

- **#** is the number of the analog output.
- **NAME** is the name assigned to the output.
- **VALUE** is the calculated value of the device being controlled based on the AOP definition and the percentage output.
- **%** is the percentage output from 0-100 of the available range.

- **BYPTIME** is the time remaining on a bypass or the word FOREVER meaning it must be manually cleared.

#	NAME	VALUE	%	BYPTIME
1.	FCUZ11VR	10.00	100	AUTO
2.	FCUZ12VR	5.00	50	AUTO

Figure 51: List of Current Analog Outputs

Step 2: To review a single AOP or a range of AOP points enter,

REV <output #'s> and press **ENTER**

For example,

- If you enter, **REV AOP 1**, analog output 1 will be displayed.
- If you enter, **REV AOP 2, 5, 8-10**, analog outputs 2, 5, and 8 through 10 will be displayed.
- If you enter, **REV AOP 1-10**, analog outputs 1 through 10 will be displayed.

6.3.5 Bypassing an AOP

Bypassing an AOP overrides the program and forces the AOP to a specified value for a period of time or forever.

Step 1: To bypass an AOP enter,

BYP AOP <AOP #> TO <0-100> <HH:MM> and press **RETURN**

- **AOP#** is the analog output number.
- **0-100** is the percentage of output you want.
- **HH:MM** is the time you want the bypass to be in affect. A bypass time of 0 will put the output into bypass indefinitely and will have to be manually cleared by using the bypass command to set the output to AUTO.

For example, to bypass AOP 1 to a maximum output for 2 hours, enter, **BYP AOP 1 TO 100 2:00**. The AOP will revert back to automatic once the period times out.

Step 2: To clear an AOP bypass enter,

BYP AOP <AOP #> <AUTO> and press **RETURN**

The AOP will return to automatic.

For example, if you wanted to return AOP 1 to its auto state before the 2 hours have timed out, you would type in **BYP AOP 1 AUTO**.

6.3.6 Reviewing RTU

Step 1: To review the current status of RTUs enter,

REV RTU and press ENTER

RTU is the acronym for Roof Top Units, which control the building HVAC systems.

A list of current RTUs networked to the system will be displayed on the screen (Figure 52) with the following information:

- # is the number of the RTU.
- **NAME** is the name assigned to the RTU.
- **TYPE** is the type of HVAC system. DX=standard direct expansion air conditioning system, HP=heat pump, GH=gas heat system.
- **ZONE** is the actual zone temperature status.
- **SPT** is the current set point being used for the control. This is after the ADJ value is calculated into the setpoint.
- **ADJ** is the local adjustment from the slide switch. This will be +/- 3 to allow local adjustment.
- **HTDIF** is the heat differential. The amount subtracted from the setpoint to determine the heat control setpoint.
- **SPLY** is the current status of the supply air sensor.
- **MODE** is the current control mode of the HVAC system. OFF, FAN, COOL1, COOL2, HEAT1, HEAT2, ECON=economizer mode, SHTDN=shutdown mode.
- **FANALM** is the status of the fan alarm monitoring point. The value is NONE or ALARM.
- **FLTALM** is the status of the filter alarm monitoring point. The value is NONE or ALARM.
- **ZALMH** is the zone alarm high temperature. It has a value of ALARM if the temperature is above the alarm setpoint for the delay time.
- **ZALML** is the Zone Alarm Low temperature. It has a value of ALARM if the temperature is below the alarm setpoint for the delay time.
- **BYPASS** shows the bypass status and time remaining if the RTU is in bypass. A value of FOREVER will need to be manually cleared.

#	NAME	TYPE	ZONE	SPT	ADJ	HTDIF	SPLY	MODE	FANALM	FLTALM	ZALMH	ZALML	BYPASS
1.	COOKLINE	DX	OSE	68	0	8	76.2	FAN	NONE	NONE	NONE	NONE	AUTO
2.	KITCHEN	DX	31.6	68	0	8	76.6	HEAT2	NONE	NONE	NONE	NONE	AUTO
3.	BAR_AREA	DX	76.9	73	0	6	OSE	COOL2	NONE	NONE	NONE	NONE	AUTO
4.	LOBBY	DX	77.1	73	0	6	OSE	COOL2	NONE	NONE	NONE	NONE	AUTO
5.	LIBRARY	DX	76.9	73	0	6	76.9	COOL2	NONE	NONE	NONE	NONE	AUTO
6.	SALAD	DX	77.1	73	0	6	77.3	COOL2	NONE	NONE	NONE	NONE	AUTO

Figure 52: List of RTUs networked to the Q3

Step 2: To review a single RTU, select RTUs, or a range of RTUs enter,

REV RTU <RTU #s> and press ENTER

For example,

- If you enter, **REV RTU 1**, RTU 1 will be displayed.

- If you enter, **REV RTU 2, 5, 10-13**, RTU 2, 5, and 10 through 13 will be displayed.
- If you enter, **REV RTU 1-10**, RTU 1 through 10 will be displayed.

6.3.7 Bypassing RTUs

Bypassing an RTU overrides the program and forces the RTU on or off for a period of time or forever. When bypassing an RTU you must provide a bypass condition for every control point on the RTU.

Step 1: To bypass an RTU enter,

BYP RTU <RTU #> <fan> <cool1> <cool2> <heat1> <heat2> <econ> <AOP%> <HH:MM> and press **RETURN**

Where:

- **RTU#** is the number assigned to the RTU.
- **FAN** is the bypass state for the fan. You can choose ON or OFF.
- **COOL1** is the bypass state for cool stage 1. You can choose ON or OFF.
- **COOL2** is the bypass state for cool stage 2. You can choose ON or OFF.
- **HEAT1** is the bypass state for heat stage 1. You can choose ON or OFF.
- **HEAT2** is the bypass state for heat stage 2. You can choose ON or OFF.
- **ECON** is the bypass state for the economizer. You can choose ON or OFF.
- **AOP%** is the bypass state for the analog output. You can choose 0-100 representing 0-100%.
- **HH:MM** is the time you want the bypass to be in affect. A bypass time of 0 will put the RTU controller into bypass indefinitely and will have to be manually cleared by using the bypass command to set the RTU to AUTO.

For example, to bypass RTU 2 cooling on for 3 hours enter,

BYP RTU 2 ON ON ON OFF OFF OFF 0 3:00

The RTU will revert back to automatic once the period times out.

Step 2: To clear a bypass enter,

BYP RLY <RTU #> < AUTO > and press **RETURN**. The RTU will return to automatic.

For example, if you wanted to return RTU 2 to its auto state before the 3 hours have timed out, you would enter in **BYP RTU 2 AUTO**.

6.3.8 Reviewing and Changing Setpoints

Step 1: To review all current setpoints enter,

REV SPT and press **ENTER**

SPT is the acronym for SETPOINTS. The list of setpoints will be displayed with each of their current values (Figure 53).

#	NAME	VALUE
=====		
1.	COOL_SPT	80
2.	COOLDLTA	5
3.	HEAT_SPT	65
4.	HUMIDSPT	55
5.	OSA_COOL	65
6.	HI_TEMP	90
7.	HIGH_RH	85

Figure 53: List of Setpoints with Current Values

Step 2: To change the value of a setpoint enter,

DEF SPT <SPT#> <INIT VALUE> and press **ENTER**

- **DEF** is short for DEFINE.
- **SPT#** is the number of the setpoint.
- **VALUE** is the new setpoint value.

For example, if you wanted to change the value of setpoint 1 in the above list to 85 enter,

DEF SPT 1 85 and press **ENTER**

The value of setpoint 1 will be changed from 80 to 85.

6.3.9 Reviewing Active Alarms

Active alarms are alarms that are currently present in the system and have not been cleared.

To review all active alarms enter,

REV ALARM and press **ENTER**

A list of all active alarms will be displayed on the screen (Figure 54). If there are no active alarms, the Q3 will return with a new command prompt.

ALARM, MN, 04/09/07 12:09:00, UIN.WIFREEZR, -46.6 F, FREEZER-TEMP OUT OF RANGE
ALARM, MN, 04/09/07 12:09:00, UIN.WICOOLER, -459.6 F, COOLER-TEMP OUT OF RANGE

Figure 54: List of All Active Alarms

6.3.10 Reviewing Historical Alarms

The Q3 keeps a list of the last 99 alarm entries in an alarm history log. The Q3 will also store system notices in the log for such items as power failures and bypasses. Notice events do not get sent on alarm dial outs. Alarm entries are listed newest to oldest.

To review all alarms enter,

REV ALARM LOG and press **ENTER**

A List of the last 99 alarm entries will be displayed. Alarm entries are listed newest to oldest (Figure 55).

```

NOTICE, IN, 04/09/07 13:12:47, SYSTEM, 1 AOP(s) BYPASSED
NOTICE, IN, 04/09/07 13:12:26, SYSTEM, 1 RLY(s) BYPASSED
ALARM, MN, 04/09/07 12:09:00, UIN.WIFREEZR, -460.6F,FREEZER-TEMP OUT OF RANGE
ALARM, MN, 04/09/07 12:09:00, UIN.WICOOLER, -459.6F,COOLER-TEMP OUT OF RANGE
NOTICE, IN, 04/09/07 10:38:56, SYSTEM, WARM START
ALARM, MN, 04/05/07 10:32:49, UIN.WIFREEZR, -460.6F,FREEZER-TEMP OUT OF RANGE
ALARM, MN, 04/05/07 10:32:49, UIN.WICOOLER, -459.6F,COOLER-TEMP OUT OF RANGE
NOTICE, IN, 04/05/07 09:02:45, SYSTEM, RECOVERED FROM POWER FAIL
NOTICE, IN, 04/05/07 09:01:44, SYSTEM, POWER FAILED
NOTICE, IN, 04/05/07 09:01:44, SYSTEM, RECOVERED FROM POWER FAIL
NOTICE, IN, 04/05/07 09:01:41, SYSTEM, POWER FAILED
ALARM, MN, 04/04/07 15:03:40, UIN.WIFREEZR, -60.6F,FREEZER-TEMP OUT OF RANGE

```

Figure 55: List of Historical Alarms, Newest to Oldest

To stop the flow of data, press **CONTROL S**. To resume the flow of data, press **CONTROL Q**. To abort the read out, press the ESC (escape) key.

6.4 Reviewing History Logs

The Q3 stores historical information on inputs, outputs, RTUs, and door access. These logs can be reviewed by using the REVIEW LOG command.

6.4.1 Input and Output Log History

You can review the log history for any input (UIN) or output (RLY) by using the REV LOG command. The Q3 logs up to 16,000 events to provide you with a comprehensive history of each point.

Step 1: To review the log history for an input enter,

REV LOG <UIN #> and press **ENTER**

- **UIN#** is the number assigned to the input.

You can review one point or up to four points at one time. For example, you may wish to review temperature (UIN1), humidity (UIN2) and the air conditioning cooling for 2 air conditioners (RLY1 & RLY2) to diagnose any environmental and air conditioning performance trends and/or problems.

Step 2: To review the log for the above points enter,

REV LOG UIN1 UIN2 RLY1 RLY2 and press **ENTER**

The log for UIN1, UIN2, RLY1 and RLY2 will be displayed. (Figure 56)

LOG FOR	UIN.ZONETEMP	UIN.HUMIDITY	RLY.COOL1	RLY.COOL2
03/20/2007 02:41 AM	72.1	45.6	OFF	OFF
03/20/2007 02:56 AM	72.5	45.3	OFF	OFF
03/20/2007 03:11 AM	72.7	48.6	OFF	OFF
03/20/2007 03:26 AM	73.6	49.6	ON	OFF
03/20/2007 03:41 AM	74.5	46.5	ON	OFF
03/20/2007 03:56 AM	77.9	47.6	ON	OFF
03/20/2007 04:00 AM	77.4	44.6	ON	ON
03/20/2007 04:11 AM	76.5	43.7	ON	ON
03/20/2007 04:41 AM	74.5	45.4	ON	ON
03/20/2007 04:56 AM	73.6	45.6	ON	ON
03/20/2007 05:11 AM	72.2	45.1	ON	ON
03/20/2007 05:26 AM	71.3	45.6	OFF	OFF

Figure 56: Log History for UIN1, UIN2, RLY1 and RLY2

The log data for these points will be displayed the screen. To stop the data flow, press **CONTROL S**. To resume the data flow, press **CONTROL Q**. To abort the readout, press the **ESC** (escape) key.

6.4.2 Input and Output Log History with Starting Date and Time

To review log data for an input or output based on a specific start time in the log enter,

REV LOG <point1> <point2> <point3><MM/DD/YY> <HH:MM> <AM/PM>
and press **ENTER**

- **<point1><point2><point3><point4>** are any combination of inputs and outputs up to four points.
- **<MM/DD/YY>** is the starting date of the log information you wish to review.
- **<HH:MM> <AM/PM>** is the starting time of the log information.

For Example, if you wish to review the log for input 2 and output 1 starting on March 8, 2007 at 4 p.m. enter,

REV LOG UIN 2 RLY 1 3/8/07 4:00 PM and press **ENTER**

6.4.3 Reviewing RTU Log History

Step 1: To review the RTU history log enter,

REV LOG RTU <RTU#> and press **ENTER**

Where **<#>** is the number of the RTU you would like to review.

A list of the last 900 entries will be displayed from the oldest to the newest (Figure 57).

RTU.LIBRARY	LOG TIME	ZONE	SPLY	MODE
03/31/2007	08:20:00 AM	76.9	76.9	OFF
03/31/2007	08:35:00 AM	76.9	76.9	OFF
03/31/2007	08:50:00 AM	76.9	76.9	OFF
03/31/2007	09:05:00 AM	76.9	76.9	OFF
03/31/2007	09:20:00 AM	77.1	76.9	OFF
03/31/2007	09:35:00 AM	76.9	76.9	OFF
03/31/2007	09:50:00 AM	76.9	76.9	COOL2
03/31/2007	10:05:00 AM	76.9	76.9	COOL2
03/31/2007	10:20:00 AM	76.9	76.9	COOL2
03/31/2007	10:35:00 AM	77.1	76.9	COOL2
03/31/2007	10:50:00 AM	77.1	76.9	COOL2
03/31/2007	11:05:00 AM	76.9	76.9	COOL2
03/31/2007	11:20:00 AM	76.9	76.9	COOL2

Figure 57: RTU History Log

The log will show the zone sensor, supply air sensor and control mode logged every 15 minutes. To stop the flow of data, press **CONTROL S**. To resume the flow of data, press **CONTROL Q**. To abort the read out, press the **ESC** (escape) key.

6.4.4 Review RTU Log History from a Specific Starting Date and Time

To review log data for any RTUs based on a specific start time in the log enter,

REV LOG RTU <#> <MM/DD/YY> <HH:MM> <AM/PM> and press **ENTER**

- <#> is the point number for the log you want to review.
- <MM/DD/YY> is the starting date of the log information you wish to review.
- <HH:MM> <AM/PM> is the starting time of the log information.

For Example, to review the log for RTU2 starting on May 5, 2007 at 1 p.m. enter,

REV LOG RTU2 5/5/07 1:00 PM and press **ENTER**

6.5 Changing Passwords

There are five levels of security for the Q3 that require a password: READ, PROGRAM, BYPASS, ACCESS, and MASTER. Up to 20 user passwords can be assigned in any combination of security level. These passwords are used for the serial direct connection and for the modem connection.

To change a password enter,

SET PSWD <#> <READ PROG BYPASS ACCESS MASTER> <PSWD> and press **ENTER**

- # is the number assigned to the user.
- **READ, PROG, BYPASS, ACCESS, MASTER** are the user's security level.

- **PSWD** is the new password for the user. Enter the password between single quotes.

For example to change password 5 for a user to have read, program and bypass level with the password of **TECH** enter,

SET PSWD 5 READ PROGRAM BYPASS 'TECH' and press **ENTER**

The password for user #5 has been changed to TECH.

6.6 Setting the Clock

To set the system's internal clock enter,

SET CLOCK <MM/DD/YYYY> <HH:MM:SS> and press **ENTER**

- **MM/DD/YYYY** is the current date.
- **HH:MM:SS** is the current time.

For example, to set the date to March 20, 2007 and the time to 3:15 pm enter,

SET CLOCK 3/20/2007 3:15:00 PM and press **ENTER**

The system will accept AM or PM or military time and entering the seconds is optional. The system assumes 0 seconds if no seconds are specified. The Daylight Savings Time feature can be turned ON or OFF using the SET DLS command (*Refer to the Q3 User Manual: Programming the Unit*).

6.7 Alarm Transport

With a modem, the Q3 has the ability to dial out to as many as four pre-programmed phone numbers whenever an alarm or an alarm clear message must be reported. (*Refer to the Q3 User Manual: Programming the Unit*).

Once a point is determined to be in alarm, the Q3 will automatically dial the alarm number(s), send the alarm and log the event in the alarm log. When the alarm condition clears, the controller will automatically send out a clear message. The clear will also be logged in the alarm log.

Below are samples of an alarm message and a clear alarm message. MJ stands for major alarm where CL stands for clear alarm.

ALARM, MJ, 03/23/07 17:26:41, UIN.WICOOLER, 50.5 F
ALARM, CL, 03/23/07 17:26:41, UIN.WICOOLER, 38.6 F

The modem will remain on-line as long as new messages are in queue for reporting. The modem will time-out and go off-line approximately five seconds after the last message has been reported.

Chapter 7 – Door Access Control

With the Q3, you have the option of networking a Proximity Card Reader or a Keypad/Proximity Card Reader (Figure 58) combination to the system for access control of up to four doors. The system supports a maximum of 600 card keys or pass codes.

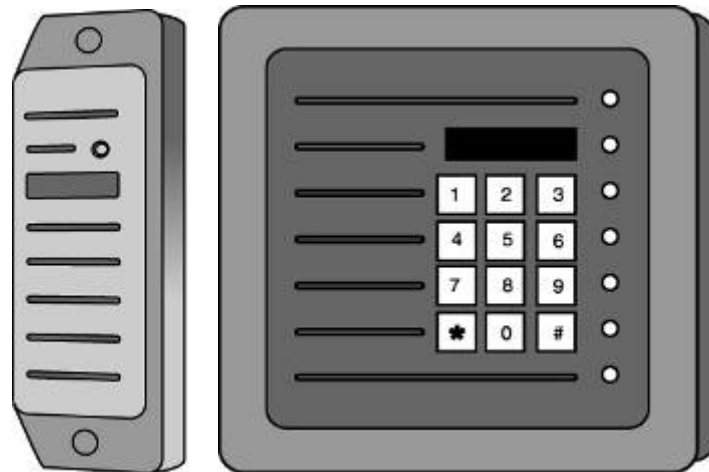


Figure 58: Proximity Card Reader and Keypad/Proximity Card Combination

To activate, delete, or change a card or pass code, you will need to access the system through your computer's terminal communication program (*See Chapter 6 – Terminal Communication & Alarm Transport.*) To set up initial programming for the door access function, *refer to the Q3 User Manual: Programming the Unit.*

7.1 Activating or Changing a Card Key or Pass Code

Step 1: To activate a new card key or pass code, or to make access changes to an existing card key or pass code enter,

DEFINE CARD <CARD ID> [TOD.#] [<DOR 1, DOR 2, DOR 3, DOR 4>] and press **ENTER**

- **Card ID** is the number or pass code assigned to the card.
- **TOD#** is an optional time schedule if you want to grant the user access only during specific time periods. If no TOD# is specified the card will work 24 hours per day. (*To set up a time schedule for door access, see Defining TOD in the Q3 User Manual: Programming the Unit.*)
- **DOR1, DOR 2, DOR 3, DOR 4** are the doors of your facility as defined by your program. If no door(s) are specified the card will access all four doors.

Step 2: Press **ENTER** to activate the card. The system will respond with OK if it accepts your command.

**DEFINE CARD 10 DOR 1 DOR 3
;OK**

If the command is not accepted, the system will respond with a help prompt or format for entering the command.

For example, if you enter **DEFINE CARD 10 DOR 1 DOR 3** and press **ENTER**, you have given the person with Card ID #10 access to the facility through door 1 and door 3.

7.2 Issuing a Temporary Card Key or Pass Code

Step 1: Use the **DEFINE CARD** command to activate the card key or pass code as described in Section 7.1.

Step 2: Assign a TOD schedule to the card for a specific day or range of days. To issue a temporary Card Key or Pass Code use **DEFINE CARD** command to activate the card key or pass code and assign a TOD schedule to the card for a specific day or range of days.

To issue a temporary Card Key using the **DEFINE CARD** command, enter

DEFINE CARD <CARD ID> [TOD.#] [<DOR 1 DOR 2 DOR 3 DOR 4>] and press **ENTER**

- **CARD ID** is the number of the Card Key.
- **TOD** is the Time of Day Schedule (See Chapter 5.7.2 for defining TODs using the WEB interface or the Q3 Programming Manual to define TODs using the command line interface.
- **DOR 1, DOR 2, DOR 3, DOR 4** are the doors through which you wish to give access. You can choose up to 4 doors.

For example if you enter **Card 1 TOD.1 DOR 1 DOR 3** card 1 will now open doors 1 and 3 while Time of Day Schedule #1 is ON.

Step 3: Press **ENTER** to activate the card or pass code.

7.3 Deleting a Card Key or Pass Code

Step 1: To delete a card key or pass code enter,

REMOVE CARD <CARD ID> and press **ENTER**

Card ID is the number or pass code assigned to the card.

Step 2: Press **ENTER** to deactivate the card. The system will respond with OK if it accepts your command.

**REMOVE CARD 10
;OK**

If the command is not accepted, the system will respond with a help prompt or format for entering the command.

7.4 Providing Remote Access

Step 1: To give access to a door from a remote location enter,

BYP RLY# ON <HH:MM> and press ENTER

- **RLY#** is the output number assigned to the door you want to open.
- **HH:MM** is the time you want access through the door to be available.

Step 2: Press **ENTER** to do the bypass open the door. The system will respond with OK if it accepts your command.

BYP RLY 1 ON 00:05

Bypass the door relay on for 5 minutes.

If the command is not accepted, the system will respond with a help prompt or format for entering the command.

7.5 Reviewing the Access Control Information

The Q3 records all access control transactions in the Access control log. When access to a door is attempted by a card key or pass code, one of the following messages will be logged:

- **DOOR ACCESS GRANTED TO CARD #:** A valid card has been received door access was granted.
- **ILLEGAL ATTEMPT BY CARD #:** Access was attempted and denied to card #. The card # was not found in the database.
- **ILLEGAL ATTEMPT TIME BY CARD #:** Access was attempted and denied to card #. The card # was found in the database but access is restricted by a TOD.#.
- **ILLEGAL SITE CODE #:** A card with a site code differing from the one defined using the DEFINE DOR command was found. No access was given.
- **DOOR OPENED:** The door was opened after access was granted.
- **DOOR CLOSED:** The door was closed after access was granted and the door was opened.
- **DOOR NEVER OPENED:** Access was granted but the door was not opened during the SECONDS OPEN period.
- **DOOR AJAR:** The door never closed after it was opened during a valid access condition.

Step 1: To review the log of access control transactions enter,

REVIEW LOG ACCESS and press ENTER

The last 800 door entries will be displayed the most recent entries at the top of the screen (Figure 59). To stop the flow of data, press **CONTROL S**. To resume the flow of data, press **CONTROL Q**. To abort the read out, press the **ESC** (escape) key.

03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 345	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	SITE CODE	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 348	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 345	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	SITE CODE	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 348	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 345	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	SITE CODE	DOR.1
03/23/2007	05:37:00	PM	ILLEGAL	ATTEMPT CARD 348	DOR.1

Figure 59: Access Log will Display Last 800 Door Entries

Chapter 8 – Troubleshooting, Technical Support and Service

8.1 Troubleshooting

The following section is designed to help you isolate the most likely system malfunctions that may occur. For additional help, contact Quest's Technical Support and Service Center.

8.1.1 Communication

PROBLEM

- I experienced a communication failure with the Q3 through my modem connection.

SOLUTION

- 1) Verify the phone line is connected to the Q3.
- 2) Verify the phone jack and phone number is correct and active.
- 3) Power cycle the Q3 to reset the built in protection fuses on the incoming phone line.
- 4) Replace the modem in the Q3.

PROBLEM

- I experienced a communication failure with the Q3 through my Ethernet connection.

SOLUTION

- 1) Verify you have a physical link by looking at the Green LED on the Ethernet jack. Reconnect or replace any back cables.
- 2) Verify the router the Q3 is connected to is operable.
- 3) Verify the IP address has not been changed. Connect to the Q3 with a crossover cable and follow the directions in section 5.10 for using the ARP and ping commands.
- 4) Replace the Ethernet communications module.

PROBLEM

- My Q3 is not communicating with my expansion modules.

SOLUTION

- 1) Log onto the Q3 and issue the REV BUS command to review the status of all bus modules. If all modules are in error then verify the wiring checking for any breaks. If only one or a couple of modules are not communicating then the problem is in those modules not the Q3.
- 2) Disconnect expansion boards by removing the bus connector. Do this one at a time to determine if one board is affecting the others. Try to isolate the problem to a particular board.
- 3) Reset the board causing the problem.
- 4) Replace the board causing the communications fault.

8.1.2 Sensor Reading

PROBLEM

- I am not receiving data from one of my sensors.

SOLUTION

- 1) Verify wiring is correct from the sensor to the Q3.
- 2) Use a known good sensor and replace the suspected bad sensor.
- 3) If the known good sensor doesn't work then disconnect the field wiring from the Q3 and connect it directly. If it works now then correct or replace field wiring.
- 4) If the known good sensor doesn't read when connected directly to the Q3 then replace the Q3.

8.1.3 Control Point Failure

PROBLEM

- One of my control points is not turning off.

SOLUTION

- 1) Verify the relay on the Q3 opens and closes with on and off commands. Bypass the point on and off and use a voltmeter to verify the relay is working.
- 2) Verify the wiring to the control point is correct
- 3) Verify the control source voltage (typically an external 24 VAC transformer) is operable and supplying proper voltage.

8.1.4 Alarm Notification Failure

PROBLEM

- I am not receiving email alarms.

SOLUTION

- 1) Check the setting in the Email Alarm notification page.
- 2) Verify the EMAIL SMTP server is operational and that the proper username and password (if required) has been entered.
- 3) Check for any firewalls and or rule sets preventing emails being sent from the location to the SMTP server.
- 4) Do a test email by clicking on the Email test button.

8.1.5 Battery

PROBLEM

- The system keeps losing history memory and clock settings.

SOLUTION

- 1) Change the system battery. *(To change the system battery, refer to the Q3 User Manual: Installing the Unit.)*

8.2 Technical Support and Service

For questions regarding technical support, service, or repair of a product, contact us at:

Quest Controls
208 9th Street Dr. West
Palmetto, FL 34221
Tel: 941-729-4799

To return defective products in or out of warranty, you must have an RMA#. To get an RMA#, call 941-723-4112.

For more information about our test and repair center, or about customer support services, visit our website at **www.questcontrols.com**.

8.3 Warranty

QUEST warrants products of its manufacture to be free from defects in design, workmanship and material under normal and proper use and service for a period of 12 months starting upon shipment from the **QUEST** factory, with the exception of Software noted below. Products not manufactured by **QUEST** will have a 90-day warranty. Software is warranted to conform to **QUEST's** Software Product Description applicable at the time of order. **QUEST's** sole obligation hereafter shall be to remedy any nonconformance of the software to the Software Product Description during the 90-day period following delivery. This warranty shall not apply to fuses, batteries, or any product or parts subjected to misuse, neglect, accident, Acts of God, or abnormal conditions of operation.

QUEST agrees to repair or replace, at the place of manufacture and without charge, all parts of said products that are returned to the **QUEST** factory within the warranty period, provided the warrantor's examination discloses to its satisfaction that the product was defective and that the equipment has not been altered or repaired other than with **QUEST's** authorization and by its approved procedures. Repair or replacement of **QUEST** products does not extend the original warranty period. A product or board may be deemed beyond repair if **QUEST** determines that it has been subject to misuse, improper maintenance, negligence or accident, damaged or had its serial number or any part thereof altered, defaced or removed. If the failure has been caused by misuse, neglect, accident, or abnormal conditions of operation, or if the warranty period has expired, repairs will be billed at a nominal cost.

This warranty is in lieu of all other warranties expressed or implied, including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. In no event shall **QUEST** be liable for any special, incidental, or consequential damages, whether in contract, tort, or otherwise.